CALL NO. 103

CONTRACT ID. 151220

HOPKINS COUNTY

FED/STATE PROJECT NUMBER NHPP 0411 (022)

DESCRIPTION MORTON'S GAP INTERCHANGE (9004)

WORK TYPE GRADE, DRAIN & SURFACE WITH BRIDGE

PRIMARY COMPLETION DATE 6/1/2017

LETTING DATE: May 29,2015

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME May 29,2015. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

PLANS AVAILABLE FOR THIS PROJECT.

DBE CERTIFICATION REQUIRED - 8%

REQUIRED BID PROPOSAL GUARANTY: Not less than 5% of the total bid.

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PART I

SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 02

CONTRACT ID - 151220

NHPP 0411 (022)

COUNTY - HOPKINS

PCN - DE05490041520
NHPP 0411 (022)

MORTON'S GAP INTERCHANGE (9004) (MP 36.500) RECONSTRUCT MORTON'S GAP INTERCHANGE AT MP 37.07 IN HOPKINS COUNTY TO INTERSTATE STANDARDS (I-69 CORRIDOR IMPROVEMENT) (MP 37.540), A DISTANCE OF 01.04 MILES.GRADE, DRAIN & SURFACE WITH BRIDGE SYP NO. 02-00232.02.

GEOGRAPHIC COORDINATES LATITUDE 37:15:08.00 LONGITUDE 87:27:01.00

COMPLETION DATE(S):

COMPLETED BY 06/01/2017 APPLIES TO ENTIRE CONTRACT

CONTRACT NOTES

PROPOSAL ADDENDA

All addenda to this proposal must be applied when calculating bid and certified in the bid packet submitted to the Kentucky Department of Highways. Failure to use the correct and most recent addenda may result in the bid being rejected.

BID SUBMITTAL

Bidder must use the Department's Expedite Bidding Program available on the Internet web site of the Department of Highways, Division of Construction Procurement. (www.transportation.ky.gov/construction-procurement)

The Bidder must download the bid file located on the Bid Express website (www.bidx.com) to prepare a bid packet for submission to the Department. The bidder must submit electronically using Bid Express.

JOINT VENTURE BIDDING

Joint venture bidding is permissible. All companies in the joint venture must be prequalified in one of the work types in the Qualifications for Bidders for the project. The bidders must get a vendor ID for the joint venture from the Division of Construction Procurement and register the joint venture as a bidder on the project. Also, the joint venture must obtain a digital ID from Bid Express to submit a bid. A joint bid bond of 5% may be submitted for both companies or each company may submit a separate bond of 5%.

UNDERGROUND FACILITY DAMAGE PROTECTION

The contractor is advised that the Underground Facility Damage Protection Act of 1994, became law January 1, 1995. It is the contractor's responsibility to determine the impact of the act regarding this project, and take all steps necessary to be in compliance with the provision of the act.

SPECIAL NOTE FOR COMPOSITE OFFSET BLOCKS

Contrary to the Standard Drawings (2012 edition) the Cabinet will allow 6" composite offset blocks in lieu of wooden offset blocks, except as specified on proprietary end treatments and crash cushions. The composite blocks shall be selected from the Cabinet's List of Approved Materials.

REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

Pursuant to KRS 176.085(1)(b), an agency, department, office, or political subdivision of the Commonwealth of Kentucky shall not award a state contract to a person that is a foreign entity required by KRS 14A.9-010 to obtain a certificate of authority to transact business in the Commonwealth ("certificate") from the Secretary of State under KRS 14A.9-030 unless the person produces the certificate within fourteen (14) days of the bid or proposal opening. If the foreign entity is not required to obtain a certificate as provided in KRS 14A.9-010, the foreign entity should identify the applicable exception. Foreign entity is defined within KRS 14A.1-070.

For all foreign entities required to obtain a certificate of authority to transact business in the Commonwealth, if a copy of the certificate is not received by the contracting agency within the time frame identified above, the foreign entity's solicitation response shall be deemed non-responsive or the awarded contract shall be cancelled.

Businesses can register with the Secretary of State at https://secure.kentucky.gov/sos/ftbr/welcome.aspx .

SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT

Questions about projects during the advertisement should be submitted in writing to the Division of Construction Procurement. This may be done by fax (502) 564-7299 or email to kytc.projectquestions@ky.gov. The Department will attempt to answer all submitted questions. The Department reserves the right not to answer if the question is not pertinent or does not aid in clarifying the project intent.

The deadline for posting answers will be 3:00 pm Eastern Daylight Time, the day preceding the Letting. Questions may be submitted until this deadline with the understanding that the later a question is submitted, the less likely an answer will be able to be provided.

The questions and answers will be posted for each Letting under the heading "Questions & Answers" on the Construction Procurement website (www.transportation.ky.gov/contract). The answers provided shall be considered part of this Special Note and, in case of a discrepancy, will govern over all other bidding documents.

HARDWOOD REMOVAL RESTRICTIONS

The US Department of Agriculture has imposed a quarantine in Kentucky and several surrounding states, to prevent the spread of an invasive insect, the emerald ash borer.

Hardwood cut in conjunction with the project may not be removed from the state. Chipping or burning on site is the preferred method of disposal.

INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES

Identification of excess material sites and borrow sites shall be the responsibility of the Contractor. The Contractor shall be responsible for compliance with all applicable state and federal laws and may wish to consult with the US Fish and Wildlife Service to seek protection under Section 10 of the Endangered Species Act for these activities.

ACCESS TO RECORDS

The contractor, as defined in KRS 45A.030 (9) agrees that the contracting agency, the Finance and Administration Cabinet, the Auditor of Public Accounts, and the Legislative Research Commission, or their duly authorized representatives, shall have access to any books, documents, papers, records, or other evidence, which are directly pertinent to this contract for the purpose of financial audit or program review. Records and other prequalification information confidentially disclosed as part of the bid process shall not be deemed as directly pertinent to the contract and shall be exempt from disclosure as provided in KRS 61.878(1)(c). The contractor also recognizes that any books, documents, papers, records, or other evidence, received during a financial audit or program review shall be subject to the Kentucky Open Records Act, KRS 61.870 to 61.884.

In the event of a dispute between the contractor and the contracting agency, Attorney General, or the Auditor of Public Accounts over documents that are eligible for production and review, the Finance and Administration Cabinet shall review the dispute and issue a determination, in accordance with Secretary's Order 11-004. (See attachment)

10/29/12

Commonwealth of Kentucky
Finance and Administration Cabinet
OFFICE OF THE SECRETARY
Room 383, Capitol Annex
702 Capital Avenue
Frankfort, KY 40601-3462
(502) 564-4240
Fax (502) 564-6785

Steven L. Beshear
Governor

Lori H. Flanery
Secretary

SECRETARY'S ORDER 11-004

FINANCE AND ADMINISTRATION CABINET

Vendor Document Disclosure

WHEREAS, in order to promote accountability and transparency in governmental operations, the Finance and Administration Cabinet believes that a mechanism should be created which would provide for review and assistance to an Executive Branch agency if said agency cannot obtain access to documents that it deems necessary to conduct a review of the records of a private vendor that holds a contract to provide goods and/or services to the Commonwealth; and

WHEREAS, in order to promote accountability and transparency in governmental operations, the Finance and Administration Cabinet believes that a mechanism should be created which would provide for review and assistance to an Executive Branch agency if said agency cannot obtain access to documents that it deems necessary during the course of an audit, investigation or any other inquiry by an Executive Branch agency that involves the review of documents; and

WHEREAS, KRS 42.014 and KRS 12.270 authorizes the Secretary of the Finance and Administration Cabinet to establish the internal organization and assignment of functions which are not established by statute relating to the Finance and Administration Cabinet; further, KRS Chapter 45A.050 and 45A.230 authorizes the Secretary of the Finance and Administration Cabinet to procure, manage and control all supplies and services that are procured by the Commonwealth and to intervene in controversies among vendors and state agencies; and

NOW, THEREFORE, pursuant to the authority vested in me by KRS 42.014, KRS 12.270, KRS 45A.050, and 45A.230, I, Lori H. Flanery, Secretary of the Finance and Administration Cabinet, do hereby order and direct the following:

I. Upon the request of an Executive Branch agency, the Finance and Administration Cabinet ("FAC") shall formally review any dispute arising where the agency has requested documents from a private vendor that holds a state contract and the vendor has refused access to said documents under a claim that said documents are not directly pertinent or relevant to the agency's inquiry upon which the document request was predicated.

II. Upon the request of an Executive Branch agency, the FAC shall formally review any situation where the agency has requested documents that the agency deems necessary to

conduct audits, investigations or any other formal inquiry where a dispute has arisen as to what documents are necessary to conclude the inquiry.

III. Upon receipt of a request by a state agency pursuant to Sections I & II, the FAC shall consider the request from the Executive Branch agency and the position of the vendor or party opposing the disclosure of the documents, applying any and all relevant law to the facts and circumstances of the matter in controversy. After FAC's review is complete, FAC shall issue a Determination which sets out FAC's position as to what documents and/or records, if any, should be disclosed to the requesting agency. The Determination shall be issued within 30 days of receipt of the request from the agency. This time period may be extended for good cause.

IV. If the Determination concludes that documents are being wrongfully withheld by the private vendor or other party opposing the disclosure from the state agency, the private vendor shall immediately comply with the FAC's Determination. Should the private vendor or other party refuse to comply with FAC's Determination, then the FAC, in concert with the requesting agency, shall effectuate any and all options that it possesses to obtain the documents in question, including, but not limited to, jointly initiating an action in the appropriate court for relief.

V. Any provisions of any prior Order that conflicts with the provisions of this Order shall be deemed null and void.

FEDERAL CONTRACT NOTES

The Kentucky Department of Highways, in accordance with the Regulations of the United States Department of Transportation 23 CFR 635.112 (h), hereby notifies all bidders that failure by a bidder to comply with all applicable sections of the current Kentucky Standard Specifications, including, but not limited to the following, may result in a bid not being considered responsive and thus not eligible to be considered for award:

102.02 Current Capacity Rating 102.10 Delivery of Proposals
102.08 Irregular Proposals 102.14 Disqualification of Bidders
102.09 Proposal Guaranty

CIVIL RIGHTS ACT OF 1964

The Kentucky Department of Highways, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252) and the Regulations of the Federal Department of Transportation (49 C.F.R., Part 21), issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the ground of race, color, or national origin.

NOTICE TO ALL BIDDERS

To report bid rigging activities call: 1-800-424-9071.

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SECOND TIER SUBCONTRACTS

Second Tier subcontracts on federally assisted projects shall be permitted. However, in the case of DBE's, second tier subcontracts will only be permitted where the other subcontractor is also a DBE. All second tier subcontracts shall have the consent of both the Contractor and the Engineer.

DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

It is the policy of the Kentucky Transportation Cabinet ("the Cabinet") that Disadvantaged Business Enterprises ("DBE") shall have the opportunity to participate in the performance of highway construction projects financed in whole or in part by Federal Funds in order to create a level playing field for all businesses who wish to contract with the Cabinet. To that end, the Cabinet will comply with the regulations found in 49 CFR Part 26, and the definitions and requirements contained therein shall be adopted as if set out verbatim herein.

The Cabinet, contractors, subcontractors, and sub-recipients shall not discriminate on the basis of race, color, national origin, or sex in the performance of work performed pursuant to Cabinet contracts. The contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted highway construction projects. The contractor will include this provision in all its subcontracts and supply agreements pertaining to contracts with the Cabinet.

Failure by the contractor to carry out these requirements is a material breach of its contract with the Cabinet, which may result in the termination of the contract or such other remedy as the Cabinet deems necessary.

DBE GOAL

The Disadvantaged Business Enterprise (DBE) goal established for this contract, as listed on the front page of the proposal, is the percentage of the total value of the contract.

The contractor shall exercise all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises participate in a least the percent of the contract as set forth above as goals for this contract.

OBLIGATION OF CONTRACTORS

Each contractor prequalified to perform work on Cabinet projects shall designate and make known to the Cabinet a liaison officer who is assigned the responsibility of effectively administering and promoting an active program for utilization of DBEs.

If a formal goal has not been designated for the contract, all contractors are encouraged to consider DBEs for subcontract work as well as for the supply of material and services needed to perform this work.

Contractors are encouraged to use the services of banks owned and controlled by minorities and women.

CERTIFICATION OF CONTRACT GOAL

Contractors shall include the following certification in bids for projects for which a DBE goal has been established. BIDS SUBMITTED WHICH DO NOT INCLUDE CERTIFICATION OF DBE PARTICIPATION WILL NOT BE ACCEPTED. These bids will not be considered for award by the Cabinet and they will be returned to the bidder.

"The bidder certifies that it has secured participation by Disadvantaged Business Enterprises ("DBE") in the amount of ____ percent of the total value of this contract and that the DBE participation is in compliance with the requirements of 49 CFR 26 and the policies of the Kentucky Transportation Cabinet pertaining to the DBE Program."

The certification statement is located in the electronic bid file. All contractors must certify their DBE participation on that page. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted.

DBE PARTICIPATION PLAN

Lowest responsive bidders must submit the *DBE Plan/ Subcontractor Request*, form TC 63-35 DBE, within 7 days of the letting. This is necessary before the Awards Committee will review and make a recommendation. **The project will not be considered for award prior to submission and approval of the apparent low bidder's DBE Plan/Subcontractor Request.**

The DBE Participation Plan shall include the following:

1 Name and address of DBE Subcontractor(s) and/or supplier(s) intended to be used in the proposed project;
2 Description of the work each is to perform including the work item , unit, quantity, unit price and total amount of the work to be performed by the individual DBE. The Project Code Number (PCN), Category Number, and the Project Line Number can be found in the "material listing" on the Construction Procurement website under the specific letting;
3 The dollar value of each proposed DBE subcontract and the percentage of total project contract value this represents. DBE participation may be counted as follows; a) If DBE suppliers and manufactures assume actual and contractual responsibility, the dollar value of materials to be furnished will be counted toward the goal as follows:

- The entire expenditure paid to a DBE manufacturer;
- 60 percent of expenditures to DBE suppliers that are not manufacturers provided the supplier is a regular dealer in the product involved. A regular dealer must be engaged in, as its principal business and in its own name, the sale of products to

the public, maintain an inventory and own and operate distribution equipment; and

- The amount of fees or commissions charged by the DBE firms for a bona fide service, such as professional, technical, consultant, or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, supplies, delivery of materials and supplies or for furnishing bonds, or insurance, providing such fees or commissions are determined to be reasonable and customary.

b) The dollar value of services provided by DBEs such as quality control testing, equipment repair and maintenance, engineering, staking, etc.;

c) The dollar value of joint ventures. DBE credit for joint ventures will be limited to the dollar amount of the work actually performed by the DBE in the joint venture;

4 Written and signed documentation of the bidder's commitment to use a DBE contractor whose participation is being utilized to meet the DBE goal; and

5 Written and signed confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment.

UPON AWARD AND BEFORE A WORK ORDER WILL BE ISSUED

Contractors must submit the signed subcontract between the contractor and the DBE contractor, the DBE's certificate of insurance, and an affidavit for bidders, offerors, and contractors from the DBE to the Division of Construction Procurement. The affidavit can be found on the Construction Procurement website. If the DBE is a supplier of materials for the project, a signed purchase order and an affidavit for bidders, offerors, and contractors must be submitted to the Division of Construction Procurement.

Changes to DBE Participation Plans must be approved by the Cabinet. The Cabinet may consider extenuating circumstances including, but not limited to, changes in the nature or scope of the project, the inability or unwillingness of a DBE to perform the work in accordance with the bid, and/or other circumstances beyond the control of the prime contractor.

CONSIDERATION OF GOOD FAITH EFFORTS REQUESTS

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder must submit a Good Faith Effort Package to satisfy the Cabinet that sufficient good faith efforts were made to meet the contract goals prior to submission of the bid. Efforts to increase the goal after bid submission will not be considered in justifying the good faith effort, unless the contractor can show that the proposed DBE was solicited prior to the letting date. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted. One complete set and nine (9) copies of this information must be received in the

office of the Division of Contract Procurement no later than 12:00 noon of the tenth calendar day after receipt of notification that they are the apparent low bidder.

Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a sample representative letter along with a distribution list of the firms solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Cabinet considers in judging good faith efforts. This documentation may include written subcontractors' quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

The Good Faith Effort Package shall include, but may not be limited to information showing evidence of the following:

1 Whether the bidder attended any pre-bid meetings that were scheduled by the Cabinet to inform DBEs of subcontracting opportunities;
2 Whether the bidder provided solicitations through all reasonable and available means;
3 Whether the bidder provided written notice to all DBEs listed in the DBE directory at the time of the letting who are prequalified in the areas of work that the bidder will be subcontracting;
4 Whether the bidder followed up initial solicitations of interest by contacting DBEs to determine with certainly whether they were interested. If a reasonable amount of DBEs within the targeted districts do not provide an intent to quote or no DBEs are prequalified in the subcontracted areas, the bidder must notify the DBE Liaison in the Office of Minority Affairs to give notification of the bidder's inability to get DBE quotes;
5 Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise perform these work items with its own forces;
6 Whether the bidder provided interested DBEs with adequate and timely information about the plans, specifications, and requirements of the contract;
7 Whether the bidder negotiated in good faith with interested DBEs not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached;
8 Whether quotations were received from interested DBE firms but were rejected as unacceptable without sound reasons why the quotations were considered unacceptable. The fact that the DBE firm's quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy DBE goals;
9 Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be subcontracted includes potential DBE participation;
10 Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the

work requirements of the bid proposal; and

11 Any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include DBE participation.

FAILURE TO MEET GOOD FAITH REQUIREMENT

Where the apparent lowest responsive bidder fails to submit sufficient participation by DBE firms to meet the contract goal and upon a determination by the Good Faith Committee based upon the information submitted that the apparent lowest responsive bidder failed to make sufficient reasonable efforts to meet the contract goal, the bidder will be offered the opportunity to meet in person for administrative reconsideration. The bidder will be notified of the Committee's decision within 24 hours of its decision. The bidder will have 24 hours to request reconsideration of the Committee's decision. The reconsideration meeting will be held within two days of the receipt of a request by the bidder for reconsideration.

The request for reconsideration will be heard by the Office of the Secretary. The bidder will have the opportunity to present written documentation or argument concerning the issue of whether it met the goal or made an adequate good faith effort. The bidder will receive a written decision on the reconsideration explaining the basis for the finding that the bidder did or did not meet the goal or made adequate Good Faith efforts to do so.

The result of the reconsideration process is not administratively appealable to the Cabinet or to the United States Department of Transportation.

The Cabinet reserves the right to award the contract to the next lowest responsive bidder or to rebid the contract in the event that the contract is not awarded to the low bidder as the result of a failure to meet the good faith requirement.

SANCTIONS FOR FAILURE TO MEET DBE REQUIREMENTS OF THE PROJECT

Failure by the prime contractor to fulfill the DBE requirements of a project under contract or to demonstrate good faith efforts to meet the goal constitutes a breach of contract. When this occurs, the Cabinet will hold the prime contractor accountable, as would be the case with all other contract provisions. Therefore, the contractor's failure to carry our the DBE contract requirements shall constitute a breach of contract and as such the Cabinet reserves the right to exercise all administrative remedies at its disposal including, but not limited to the following:

- Disallow credit toward the DBE goal;
- Withholding progress payments;
- Withholding payment to the prime in an amount equal to the unmet portion of the contract goal; and/or
- Termination of the contract.

PROMPT PAYMENT

The prime contractor will be required to pay the DBE within seven (7) working days after he or she has received payment from the Kentucky Transportation Cabinet for work performed or materials furnished.

CONTRACTOR REPORTING

All contractors must keep detailed records and provide reports to the Cabinet on their progress in meeting the DBE requirement on any highway contract. These records may include, but shall not be limited to payroll, lease agreements, cancelled payroll checks, executed subcontracting agreements, etc. Prime contractors will be required to submit certified reports on monies paid to each DBE subcontractor or supplier utilized to meet a DBE goal. These reports must be submitted within 14 days of payment made to the DBE contractor.

Payment information that needs to be reported includes date the payment is sent to the DBE, check number, Contract ID, amount of payment and the check date. Before Final Payment is made on this contract, the Prime Contractor will certify that all payments were made to the DBE subcontractor and/or DBE suppliers.

The Prime Contractor should supply the payment information at the time the DBE is compensated for their work. Form to use is located at:
http://transportation.ky.gov/Construction/Pages/Subcontracts.aspx

The prime contractor should notify the KYTC Office of Civil Rights and Small Business Development seven (7) days prior to DBE contractors commencing work on the project. The contact is Melvin Bynes and the telephone number is (502) 564-3601.

Photocopied payments and completed form to be submitted to: Office of Civil Rights and Small Business Development 6th Floor West 200 Mero Street Frankfort, KY 40622

DEFAULT OR DECERTIFICATION OF THE DBE

If the DBE subcontractor or supplier is decertified or defaults in the performance of its work, and the overall goal cannot be credited for the uncompleted work, the prime contractor may utilize a substitute DBE or elect to fulfill the DBE goal with another DBE on a different work item. If after exerting good faith effort in accordance with the Cabinet's Good Faith Effort policies and procedures, the prime contractor is unable to replace the DBE, then the unmet portion of the goal may be waived at the discretion of the Cabinet.

04/29/2015

TRAINEES

In Compliance with the "TRAINING SPECIAL PROVISION" included in Part III of the Proposal, the Contractor will be required to employ a trainee(s) for this contract.

PROJECT TRAFFIC COORDINATOR (PTC)

Be advised this project is a significant project pursuant to section 112.03.12.

ASPHALT MIXTURE

Unless otherwise noted, the Department estimates the rate of application for all asphalt mixtures to be 110 lbs/sy per inch of depth.

DGA BASE

Unless otherwise noted, the Department estimates the rate of application for DGA Base to be 115 lbs/sy per inch of depth.

DGA BASE FOR SHOULDERS

Unless otherwise noted, the Department estimates the rate of application for DGA Base for Shoulders to be 115 lbs/sy per inch of depth. The Department will not measure necessary grading and/or shaping of existing shoulders prior to placing of DGA Base, but shall be incidental to the Contract unit price per ton for DGA Base.

Accept payment at the Contract unit price per ton as full compensation for all labor, materials, equipment, and incidentals for grading and/or shaping of existing shoulders and furnishing, placing, and compacting the DGA Base.

INCIDENTAL SURFACING

The Department has included in the quantities of asphalt mixtures established in the proposal estimated quantities required for resurfacing or surfacing mailbox turnouts, farm field entrances, residential and commercial entrances, curve widening, ramp gores and tapers, and road and street approaches, as applicable. Pave these areas to the limits as shown on Standard Drawing RPM-110-06 or as directed by the Engineer. In the event signal detectors are present in the intersecting streets or roads, pave the crossroads to the right of way limit or back of the signal detector, whichever is the farthest back of the mainline. Surface or resurface these areas as directed by the Engineer. The Department will not measure placing and compacting for separate payment but shall be incidental to the Contract unit price for the asphalt mixtures.

FUEL AND ASPHALT PAY ADJUSTMENT

The Department has included the Contract items Asphalt Adjustment and Fuel Adjustment for possible future payments at an established Contract unit price of $1.00. The Department will calculate actual adjustment quantities after work is completed. If existing Contract amount is insufficient to pay all items on the contract with the adjustments, the Department will establish additional monies with a change order.

ASPHALT PAVEMENT RIDE QUALITY CATEGORY A

The Department will apply Pavement Rideability Requirements on this project in accordance with Section 410, Category A.

OPTION A

Be advised that the Department will accept compaction of asphalt mixtures furnished for driving lanes and ramps, at 1 inch (25mm) or greater, on this project according to OPTION A in accordance with Section 402 and Section 403 of the current Standard Specifications. The Department will require joint cores as described in Section 402.03.02 for surface mixtures only. The Department will accept compaction of all other asphalt mixtures according to OPTION B.

Special Note for Soil Nail Walls

Hopkins County
EB 9004, Soil Nail Retaining Wall
Item No. 2-8633.00

1.0 DESCRIPTION

1.1 This work is for the design and construction of permanent “Soil Nail Walls". Use an approved Soil Nail Wall Contractor that has the expertise and capability to complete the work required by this Special Note. Only Contractors pre-qualified by the Kentucky Department of Highways (the Department) and that meet any specific requirements for this project may perform soil nail wall design and construction for this project.

1.2 Subsurface data from the geotechnical exploration is included in the Contract Plans. Rock cores (if applicable) are available for viewing at the Geotechnical Branch in Frankfort, 502-564-2374. Contractors may view rock cores (if applicable); call a minimum of two (2) days in advance to schedule a viewing. A link to the Geotechnical Report can be provided under Project Related Information for the letting if requested.

2.0 SCOPE OF WORK

2.1 The contract item "Soil Nail Wall" includes furnishing the design calculations and construction plans, materials, labor, tools, equipment, and other incidental items required for the design, construction, and testing of permanent soil nail walls as described herein. See the contract plans for an overview of the soil nail wall(s).

2.2 Soil nail wall construction includes excavating in staged lifts; drilling soil nail drillholes; providing, placing and grouting the encapsulated or epoxy coated nail bar tendons into the drillholes; placing drainage elements; placing shotcrete reinforcement; applying shotcrete facing over the reinforcement; attaching bearing plates and nuts; performing nail testing; and installing permanent facing. Refer to Figure 2.1 in the FHWA Geotechnical Engineering Circular No. 7 "Soil Nail Walls" for the components of a soil nail wall.

2.3 Soil nail wall construction requires excavation in staged lifts***. Excavation in the vicinity of the wall face requires special care and effort compared to general earthwork excavation and close coordination between the earthwork contractor and the Soil Nail Wall Contractor.*** The Prime Contractor should take this into account during bidding and should consult the Excavation Section of this Special Note and the Contract Plans for details.

2.4 Subject to the requirements in the Contract Plans and this Special Note, select the method of excavation, drilling method and equipment, final drillhole diameter(s), and grouting procedures to meet the performance requirements specified herein.

2.5 In design and construction of the wall, consider the potential risks involved due to slope failure. Excavation stability, slope stability, wall alignment, and wall stability are the Contractor's responsibilities from the beginning of work until final acceptance. Damage to property (public or private) or to the wall itself during construction is the responsibility of the Contractor. Analyze the soil nail wall system in order to ensure that the wall system will function as intended.

2.6 The main body of this Special Note is general for permanent soil nail walls. Refer to the Appendix or Appendices for any project specific requirements.

2.7 Contract Plans are defined as plans prepared by the Department and/or authorized representative containing the Soil Nail Wall Profile and Layout, Soil Nail Wall Details, Subsurface Data, etc., to be used by the Soil Nail Specialty Contractor to design the soil nail wall. These plans are included in the Bid Proposal.

2.8 Construction Plans are defined as plans prepared by or for the Soil Nail Wall Contractor under the direction of the Wall Design Engineer and accepted by the Engineer for construction of the soil nail wall.

3.0 REFERENCES

The documents below apply to this work. Unless noted otherwise, use the current edition as of the letting date of this project.

3.1 Contract Plans and Plan Notes

3.2 The "Kentucky Standard Specifications for Road and Bridge Construction", Current Edition with supplements. This document may be referred to as "Specifications" or "Standard Specifications" elsewhere in this Special Note.

3.3 The Department Manuals "Kentucky Methods", "List of Approved Materials", and "Field Sampling and Testing Practices".

3.4 American Society for Testing and Materials (ASTM) Standards, Current Edition.

3.5 American Association of State Highway and Transportation Officials (AASHTO) Standards, Current Edition.

3.6 FHWA Publication FHWA-IF-03-017, " Geotechnical Engineering Circular No. 7: Soil Nail Walls" (GEC No. 7), March 2003.

3.7 AASHTO LRFD Bridge Design Specifications, Current Edition, with all interims.

3.8 AISC Steel Construction Manual for the design of structural hardware applies if the design is not covered in the AASHTO Standard Specifications for Highway Bridges, Current Edition, with all interims.

4.0 EXPERIENCE REQUIREMENTS AND SUBMITTALS

Requirements for personnel experience and pre-construction submittals, **including submittal deadlines**, are in this section. Do not begin construction on any soil nail wall, other than stockpiling of wall materials, until the Engineer receives and accepts all submittals required in this section. Additional submittals and records required during

and after construction may be included in other sections of this Special Note. The use of electronic submittals (preferably in .pdf format) will expedite the approval process.

4.1 Experience Requirements The Department considers a satisfactory record of experience in soil nail wall design and construction important to successfully complete this work. Use personnel meeting the requirements below on this project and submit electronically in PDF format all information necessary to verify that they meet the requirements. **Submit this information no later than thirty (30) calendar days after receiving Notice to Begin Work.** As a minimum, include the following for each project necessary to satisfy the requirements:

1. The names and current phone numbers of the owner's representative(s) who can verify that the Contractor meets the requirements.
2. The dates of construction.
3. The type (temporary/permanent) of structure.
4. The number of nails.
5. The maximum wall design height.

The Department will review the experience requirements and respond to the Contractor within twenty-one (21) calendar days. Review and acceptance by the Engineer is for evidence of the required experience and does not in any way relieve the Contractor of full responsibility for the successful and satisfactory completion of the work.

4.2 Contractor Experience Requirements The requirements for the Soil Nail Wall Contractor are:

a. A minimum of five (5) years experience constructing temporary and/or permanent soil nail retaining walls, with a minimum of three (3) projects and at least 600 soil nails or 15,000 ft^2 of wall face completed in the past five (5) years.
b. A minimum of three (3) soil nail retaining wall projects with permanent soil nail retaining walls at least 15 ft high completed in the past five (5) years, and at least 600 permanent soil nails or 15,000 ft^2 of wall face completed in the past five (5) years.

Only drilled and grouted soil nails will satisfy these requirements. Some projects may be used to satisfy more than one requirement.

4.3 Personnel Experience Requirements

4.3.1 Wall Design Engineer Experience Requirements

Use a Wall Design Engineer meeting the requirements below to assume full responsibility for soil nail wall design on this project. One or more other Engineers may assist with the design and plan preparation under the supervision of the Wall Design Engineer, who may be an employee of the Soil Nail Wall Contractor or a Consultant. However, manufacturers' representatives may not be used to satisfy these requirements. The requirements for the Wall Design Engineer are:

a. Licensed Professional Engineer (Civil and/or Structural) in Kentucky.
b. A minimum of five (5) years design and/or construction experience on temporary and/or permanent soil nail retaining walls, with experience on a minimum of three (3) projects and at least 600 soil nails or 15,000 ft^2 of wall face, constructed in the past five (5) years.

4.3.2 Project Engineer Experience Requirements

Use an engineer meeting the requirements below to have overall technical responsibility for soil nail wall construction on this project. It is not necessary for the Project Engineer to be on site on a daily basis. Consultants or manufacturers' representatives may not be used to satisfy these requirements. The requirements for the Project Engineer are:

a. Licensed Professional Engineer in the U.S.
b. A minimum of five (5) years design and/or construction experience on temporary and/or permanent soil nail retaining walls, with experience on a minimum of three (3) projects and at least 600 soil nails or 15,000 ft^2 of wall face, constructed in the past five (5) years.
c. An employee of the Soil Nail Wall Contractor.

The Project Engineer and the Wall Design Engineer may be the same person if that person meets all the stated requirements.

4.3.3 On-Site Supervisor Experience Requirements

Use an on-site supervisor (project manager, superintendent, etc.) meeting the requirements below to be responsible for the daily soil nail wall construction activities on this project. Consultants or manufacturers' representatives may not be used to satisfy the requirements of this section. The requirements for the On-Site Supervisor are:

a. A minimum of five (5) years construction experience on temporary and/or permanent soil nail retaining walls, with experience on a minimum of three (3) projects and at least 600 soil nails or 15,000 ft^2 of wall face, constructed in the past five (5) years.
b. An employee of the Soil Nail Wall Contractor.

The On-Site Supervisor and the Project Engineer may be the same person if that person meets all the stated requirements. The Department will consider allowing a team of more than one supervisor to satisfy these requirements and perform the associated functions, subject to certain conditions at the discretion of the Engineer. The Department may consider related experience with other similar types of specialty construction.

4.3.3 Shotcrete Nozzlemen and Finishers Experience Requirements

Use shotcrete nozzlemen and finishers meeting the requirements below:

a. Certification in accordance with the ACI 506.3R "Guide to Certification of Shotcrete Nozzlemen" by an ACI recognized shotcrete testing lab and/or recognized shotcreting consultant and covering the type of shotcrete to be

used (plain wet-mix, plain dry-mix or steel fiber reinforced). Provide proof of ACI certification.

b. Experience with similar shotcrete application on at least three (3) projects constructed in the past five (5) years, with work totaling at least 5,000 square feet of area.

4.3.5 The Engineer may suspend work on the wall if the Contractor substitutes unqualified and/or unapproved personnel or if the personnel are not performing the required duties. If work is suspended due to substitution of unqualified and/or unapproved personnel, the Contractor is fully liable for all costs resulting from the suspension of work. No adjustment in contract time resulting from this suspension of work will be allowed.

4.4 Design Calculations and Construction Plans For each wall, submit electronically in PDF format for review Construction Plans and Design Calculations prepared by or under the supervision of the Wall Design Engineer and signed by the Wall Design Engineer. Submit in the same format revisions to construction plans and design calculations each time corrections are required. In the design calculations and construction plans, show explicit details sufficient to allow an expeditious review of the proposed design and construction procedures. Hard copies of the reviewed and accepted plans and calculations will required as noted in Section 4.4.2. **Submit this information no later than sixty (60) calendar days after receiving Notice to Begin Work.**

Submit any changes or deviations from the Construction Plans for additional review and acceptance. No adjustments in contract time will be allowed due to incomplete submittals. Revise the drawings when plan dimensions are revised due to field conditions, evaluation of verification or proof test results, or for other reasons. Provide revised design calculations signed by the Wall Design Engineer for all design changes made during construction of the wall.

4.4.1 Design Calculations As a minimum, include the following items:

1. A written summary report that describes the overall soil nail wall design.
2. Applicable code requirements and design references.
3. Nail wall critical design cross sections geometry including soil/rock strata and location, magnitude, and direction of the design slope or external surcharge loads and piezometric levels.
4. Design criteria including, soil/rock shear strengths (friction angle and cohesion), unit weights, and ground-grout pullout resistances and nail drillhole diameter assumptions for each soil/rock strata.
5. Partial safety factors/strength factors (for Service Load Design) used in the design on the pullout resistance, surcharges, soil/rock unit weights, nail head strengths, and steel, shotcrete, and concrete materials. Minimum required global stability soil factor of safety for SLD design.
6. Seismic design acceleration coefficient.

7. Design calculation sheets with the project number, wall location, designation, date of preparation, initials of designer and checker, and page number at the top of each page. Provide an index page with the design calculations.
8. Design notes including an explanation of any symbols and computer programs used in the design.
9. Nail wall final design cross-sections geometry including soil/rock strata and location, magnitude, and direction of slope or external surcharge loads and piezometric levels with critical slip surface shown along with minimum calculated Global stability soil factor of safety of SLD design and required nail lengths and strengths (nail bar sizes and grades) for each nail row.
10. Structural design calculations for wall facings and nail head/facing connections including consideration of facing flexural and punching shear strength, headed studs tensile strength, upper cantilever, minimum reinforcement ratio, cover and splice requirements.
11. Any other necessary design calculations.

4.4.2 Construction Plans As a minimum, include the following items:

1. A natural scale plan view of the wall identifying:
   a. A reference baseline and north arrow.
   b. The offset and offset from the construction centerline or baseline to the face of the wall at its base at all changes in horizontal alignment.
   c. Beginning and end of wall stations and offsets.
   d. Right-of-way and permanent or temporary construction easement limits, location of all known active and abandoned existing utilities, adjacent structures or other potential interferences. The centerline of any drainage structure or drainage pipe behind, passing through or passing under the wall.
   e. Limits of longest nails.
   f. Subsurface exploration locations shown on a plan view of the proposed wall alignment with appropriate references base lines to fix the locations of the explorations relative to the wall.
2. A natural scale elevation view of the wall identifying:
   a. The elevation at the top of the wall, at all horizontal and vertical break points, and at least every 25 ft. along the wall.
   b. Elevations at the wall base and the top of leveling pads for casting CIP facing (if applicable).
   c. Beginning and end of wall stations and stations of alignment breaks.
   d. The distance along the face of the wall to all steps in the wall base.
   e. Wall elevation view showing nail locations and elevations; vertical and horizontal nail spacing; and the location of wall drainage elements and permanent facing expansion/contraction joints (if applicable) along the wall length.

f. Existing and finish grade profiles both behind and in front of the wall.
g. Elevation Datum

3. Design parameters, including ultimate and allowable nail pullout resistance.
4. General notes for constructing the wall including construction sequencing or other special construction requirements.
5. Horizontal and vertical curve data affecting the wall and wall control points. Match lines or other details to relate wall station to centerline stationing.
6. A summary of quantities of each wall showing estimated square feet of wall face.
7. Nail wall typical section including staged excavation lifts, wall and excavation face batter, nail spacing and inclination, nail bar sizes, and corrosion protection details.
8. A typical detail of production and test nails defining the nail length, minimum drillhole diameter, inclination, test nail bonded and unbonded test lengths and Design Test Loads (DTL's).
9. A soil nail schedule including:
   a. Soil nail numbers
   b. Soil nail design loads
   c. Type, size, and number of bars
   d. Total nail lengths
   e. Nail hole diameters
   f. Angle of nail inclination
   g. Nail locations and spacing
10. Details, dimensions, and schedules for all nails, reinforcing steel, wire mesh, bearing plates, headed studs, etc. and/or attachment devices for shotcrete, cast-in-place or prefabricated facings.
11. Dimensions and schedules of all reinforcing steel including reinforcing bar bending details.
12. Details and dimensions for wall appurtenances such as barriers, coping, drainage gutters, fences, etc.
13. Details for constructing wall around drainage facilities.
14. Details for terminating wall and adjacent slope construction.
15. Facing finishes, color and architectural treatment requirements (if applicable) for permanent wall facing details.

The Department will complete the review within thirty (30) calendar days of each submittal; the Department will not suspend charging working days for this review period. Insufficient design and/or plan details, as judged by the Engineer, will be cause for withholding acceptance. The Contractor is fully liable for all costs resulting from acceptance being withheld; the Department will not suspend charging working days as the result of not accepting the design, details, or plans. Review and acceptance of the plans by the Engineer is for evidence of work to

be performed and does not in any way relieve the Contractor of full responsibility for the design and for successful and satisfactory completion of the work.

After the review is completed and the Engineer accepts the Design Calculations and Construction Plans, furnish the Resident Engineer one full set of accepted Final Construction Plans on mylar, 36 x 22 x 0.004 inch, which will produce clear prints and microfilms, ten (10) full sets of accepted Final Construction Plans for the Department's use, and four (4) sets of accepted Final Design Calculations. Submit design calculations and construction plans, stamped and signed by the Soil Nail Wall Design Engineer. Provide a set of the above information electronically in PDF format

4.5 Construction and Materials Submittals Submit electronically in PDF format the following. **Submit this information no later than one hundred twenty (120) calendar days after receiving Notice to Begin Work and sixty (60) calendar days prior to beginning wall construction.**

1. The proposed start date and proposed wall construction sequence and schedule including:
   a. Plan describing how surface water will be diverted, controlled and disposed of.
   b. Proposed methods and equipment for excavating the soil and/or rock to the staged excavation lifts, including the proposed grade elevations for each excavation lift.
   c. Measures to ensure wall and slope stability during various stages of wall construction and excavation where discontinuous rows of nails will be installed (if applicable); information on space requirements for installation equipment; temporary shoring plans (if applicable); information on provisions for working in the proximity of underground facilities or utilities (if applicable).
   d. Proposed nail drilling and grouting methods and equipment including drillhole diameter proposed to achieve the required pullout resistance values and any variation of these along the wall alignment.
2. Grout submittal including:
   a. type of mixer;
   b. water/cement ratio;
   c. type of additives;
   d. design grout pressure;
   e. type of cement;
   f. quantity of flyash;
   g. mix design;
   h. design strength of grout; and
   i. mix verification testing;

3. Certified mill test results for nail bars and couplers from each heat specifying the ultimate strength, yield strength, elongation and composition.
4. Certificates of Compliance for the following materials, if used. Provide certificates stating that the material or assemblies to be provided will fully comply with the contract requirements:
    a. Nail Centralizers
    b. Nail Encapsulation
    c. Bearing Plates
    c. Nuts
    d. Portland Cement
    e. Documentation to support any other requirements in the Materials Section of this Special Note.
5. Shotcrete and Drainage submittals including:
    a. Proposed methods of shotcrete placement and of controlling and maintaining facing alignment and location and shotcrete thickness.
    b. Shotcrete mix design performed by a certified ACI Level II or KRMCA Level II technician including:
        - Type of Portland cement.
        - Aggregate source and gradation.
        - Proportions of mix by weight and water-cement ratio.
        - Proposed admixtures, manufacturer, dosage, technical literature.
        - If prepackaged shotcrete is used, previous strength test results for the same shotcrete mix from the same manufacturer completed within one year of the start of shotcreting may be submitted for initial verification of the required compressive strengths at start of production work.
    c. Certificates of Compliance, manufacturers' engineering data and installation instructions for the PVC drain piping, drainage geotextile, geocomposite drain strip, drain grate and accessories.
6. Proposed nail testing methods and equipment setup including:
    a. Details of the jacking frame and appurtenant bracing.
    b. Details showing methods of isolating test nails during shotcrete application (i.e., methods to prevent bonding of the soil nail bar and the shotcrete facing during testing).
    c. Details showing methods of providing the temporary unbonded length and of grouting the temporary unbonded length of test nails after completion of testing.
    d. Specific test nail locations including stations and elevations.
    e. Equipment list.
    f. Identification number and certified calibration records for each test jack and pressure gauge (calibrated as a unit no more than 12 months prior to use) and load cell to be used.

7. Instrumentation submittals, if required.
8. Any other documentation required to verify that proposed construction procedures and materials fully comply with all requirements in the contract documents.

The Department will complete the review within thirty (30) calendar days after accepting the Design Calculations and Construction plans or within thirty (30) calendar days after receiving each submittal; the Department will not suspend charging working days for this review period. Unacceptable methods or documentation, as judged by the Engineer, will be cause for withholding acceptance. The Contractor is fully liable for all costs resulting from acceptance being withheld; the Department will not suspend charging working days as the result of not accepting the design, details, or plans. Review and acceptance by the Engineer is for evidence of work to be performed and does not in any way relieve the Contractor of full responsibility for the successful and satisfactory completion of the work.

4.6 Soil Nail Wall Pre-Construction Meeting A Pre-Construction Meeting to discuss soil nail wall construction will be required. This meeting will be held after all soil nail submittals in Sections 4.1, 4.2, 4.3, and 4.4 have been received, reviewed, and accepted by the Department, after the submittals in Section 4.5 have been received by the Department, and at least ten (10) working days prior to the beginning of soil nail construction. The purpose of the meeting is to discuss construction procedures, personnel, and equipment to be used. The following will be expected to attend:

- Representing the Contractor and Subcontractors - Prime Contractor Representative, Soil Nail Wall Design Engineer, Soil Nail Wall Project Engineer, and Soil Nail Wall On-Site Supervisor. Also, representatives of the Excavation Contractor, Shotcreting Contractor, and Surveyor, if different than the Prime or Soil Nail Wall Contractor.
- Representing the Quality Control Team - QCP Manager and Lead Inspector.
- Representing the Department - Section Engineer, Central Office Construction Engineer, Geotechnical Branch Representative and others as deemed appropriate by the Section Engineer.

If the Contractor's key personnel change or if the Contractor proposes a significant revision to soil nail construction procedures, additional Soil Nail Pre-Construction meetings may be required at the discretion of the Engineer.

5.0 DESIGN

Design the soil nail wall using the Allowable Stress Design (ASD) method, also known as Service Load Design (SLD). Primary design references include but are not limited to: FHWA Publication FHWA-IF-03-017, "Geotechnical Engineering Circular No.7, Soil Nail Walls", March 2003; AASHTO Standard Specifications for Highway Bridges,

Current Edition, with all interims. Use required partial safety factors, allowable strength factors, and minimum global stability soil factors of safety in accordance with the FHWA GEC No. 7, unless specified otherwise; critical structure requirements apply. Perform structural design of any individual wall elements not covered in FHWA GEC No. 7 by the Service Load Design methods in conformance with appropriate articles of the AASHTO Specifications. Estimated soil/rock design shear strength parameters, slope and external surcharge loads, type of wall facing and facing architectural requirements, soil nail corrosion protection requirements, known utility locations, easements, and right-of-ways will be as shown in the Contract Plans or specified elsewhere in this Special Note.

Refer to the Contract Plans for additional information to be used for the design of the soil nail wall, including: Wall Plan and Elevation Views, Soil Nail Wall Details, and Subsurface Data.

5.1 Soil Nail Capacity Determine the allowable pullout resistance necessary to develop the required design loads using theoretical and empirical methods, and based on evaluation of the subsurface data in the Contract Plans and/or inspection of the site. Verify the desired soil nail capacities in accordance with the Soil Nail Testing and Acceptance Section of this Special Note.

5.2 Soil Nail Geometry

- Unless specified in the Contract Plans or elsewhere in this Special Note, provide a minimum soil nail length of 10 ft.
- Provide a minimum nail hole diameter of 6 inches.
- Provide a nail inclination of at least 10^{o} but no more than 20^{o}, unless otherwise specified in the Contract Plans or elsewhere in the Special Note.
- Do not extend the nails beyond the right-of-way or easement limits shown in the Contract Plans.

5.3 Corrosion Protection Provide design and details for Class I Protection in accordance with FHWA GEC No. 7 (Sections C.3 and C.4), except that the required thickness of bar-coating epoxy is 7-12 mils rather than 16 mils.

5.4 Structural Hardware Design structural hardware in accordance with the current edition of the AISC Steel Construction Manual and the current edition of the AASHTO Standard Specifications for Highway Bridges with interims. Where these conflict, AASHTO Specifications with interims govern.

5.5 Temporary Shotcrete and Wall Drainage Design a temporary shotcrete and permanent wall drainage system as shown in the Contract Plans and/or specified elsewhere in this Special Note. The Wall Design Engineer is responsible for providing all necessary details required to successfully construct the temporary shotcrete facing and wall drainage system (including weep drains and/or toe drains as applicable) to satisfy the design intent of the wall. Comply with AASHTO Specifications or the FHWA GEC No. 7 for any specific items that may not be addressed herein or elsewhere in the Contract Documents.

5.6 Wall Alignment Ensure that the wall is compatible with the horizontal and vertical alignment indicated in the Contract Plans. Survey control is the front face of the wall.

5.7 Permanent Concrete Facing When permanent concrete facing is required, provide cast-in-place concrete facing unless otherwise specified in the plans. Refer to the plans for detail concerning formliners or other architectural treatments that may be required. Design concrete facing for full loads at final condition (in-place facing and complete construction). Provide a minimum facing thickness according to the following:

Cast-in-Place Concrete with 1 Mat of Reinforcement	10 inches
Cast-in-Place Concrete with 2 Mats of Reinforcement	12 inches

The minimum concrete cover over reinforcement is 3 inches against temporary shotcrete and 2 inches on the front face. Provide joints and joint materials as shown in the Contract Plans.

Protrusions beyond the face of the wall are not allowed. Completely fill any voids between the permanent facing and the construction facing with grout.

Include details for formwork connections to the shotcrete facing and/or nails (if applicable), proposed concrete placement method and placement rates, and accompanying structural calculations verifying the structural adequacy of the formwork, connections, and shotcrete facing and/or nails to support the loading induced by the fluid CIP concrete. When anchors embedded into the shotcrete facing will be used to support the 1-sided CIP face form, include calculations illustrating the anchor design load (calculated as the design concrete fluid pressure times the anchor tributary area).

5.8 Surface Drainage Coordinate design of surface drainage above the walls with the wall design.

6.0 MATERIALS

Provide materials conforming to the requirements below when the materials are required by the Contract Plans, this Special Note, the Construction Plans, or elsewhere in the Contract Documents.

6.1 Soil Nails

6.1.1 Solid Bar Nails AASHTO M31/ASTM A615, Grade 60 or 75, ASTM A722 for Grade 150. Deformed bar, continuous without splices or welds, new, straight, undamaged, and encapsulated. Threaded a minimum of 6 inches on the wall anchorage end to allow proper attachment of bearing plate and nut. Threading may be continuous spiral deformed ribbing provided by the bar deformations (e.g. continuous threadbars) or may be cut into a reinforcing bar. If threads are cut into a reinforcing bar, provide the effective area used for design, at no additional cost. Use mechanical splicers only for nails greater than 40 ft. in length.

6.1.2 Bar Couplers Bar couplers that develop the full ultimate tensile strength of the bar as certified by the manufacturer.

6.1.3 Fusion Bonded Epoxy Coating ASTM A 775, 7-12 mil thickness electrostatically applied. Bend test requirements are waived. Coating at the wall anchorage end of epoxy-coated bars may be omitted over the length provided for threading the nut against the bearing plate.

6.1.4 Encapsulation Minimum 40 mils thick corrugated HDPE tube conforming to AASHTO M252 or corrugated PVC tube conforming to ASTM D1784, Class 13464-B.

6.2 Soil Nail Appurtenances

6.2.1 Centralizers Manufactured from Schedule 40 PVC pipe or tube, steel or other material not detrimental to the nail steel (do not use wood); securely attached to the nail bar; sized to position the nail bar within 1 inch of the center of the drillhole; sized to allow tremie pipe insertion to the bottom of the drillhole; and sized to allow grout to freely flow up the drillhole.

6.2.2 Nail Grout Provide Type I or III Portland Cement conforming to ASTM C 150 and Section 801 of the Standard Specifications. Provide fresh cement that does not contain any lumps or other indication of hydration or “pack set.” Provide water in the grout that is potable, clean and free of injurious substances, and meets the requirements of Section 803 of the Standard Specifications, except that the chloride content of the water does not exceed 100 ppm.

Provide grout consisting of a pumpable neat mixture of cement and water and is stable (bleed less than 2 percent), fluid, with a minimum 28-day compressive strength of 2000 psi and 1000 psi at 3 days, measured in accordance with ASTM C 109. No later than thirty days prior to beginning grouting operations, submit to the Engineer results of tests performed by an approved laboratory which demonstrate that the proposed grout mixture meets the requirements of this note. Include a graph with this information relating compressive strength of the grout to age covering a range of ages from 24 hours to 28 days.

Add water to the mixer first followed by cement and the admixtures. Mix the grout in mechanical mixing equipment of a type capable of continuous mixing which produce a grout free of lumps and undispersed cement. Auger mixing of the grout is not permitted. Retempering to the grout is not permitted.

Required Grout Physical Properties		
Property	**Test Value**	**Test Method**
Water-Cement Ratio	Max. 0.45	----------
28 Day Compressive Strength (Average of 3 cubes)	Min. 2000 psi	ASTM C109
3 Day Compressive Strength (Average of 3 cubes)	Min. 1000 psi	ASTM C109
Expansion	0.5% min 2% max	ASTM C1090

6.2.3 Admixtures Section 802 of the Standard Specifications. Admixtures which control bleed, improve flowability, reduce water content and use retard set in the grout, subject to review and acceptance by the Engineer. Accelerators are not permitted. Expansive admixtures may only be used in grout used for filling sealed encapsulations. Use admixtures compatible with the grout and mixed in accordance with the manufacturer's recommendations.

6.2.4 Film Protection Polyethylene film per AASHTO M171.

6.3 Bearing Plates, Nuts, and Welded Stud Shear Connectors

6.3.1 Bearing Plates ASTM A36

6.3.2 Nuts AASHTO M291, Class B, hexagonal, fitted with beveled washer or spherical seat to provide uniform bearing.

6.3.3 Shear Connectors AASHTO Construction Specifications, Section 11.3.3.1

6.4 Temporary Shotcrete and Wall Drainage Materials

Deliver, store and handle materials to prevent contamination, segregation, corrosion or damage. Store liquid admixtures to prevent evaporation and freezing.

Provide drainage geotextile and geocomposite drain strips in rolls wrapped with a protective covering and stored in a manner which protects the fabric from mud, dirt, dust, debris, and shotcrete rebound. Do not remove protective wrapping until immediately before the geotextile or drain strip is installed. Avoid extended exposure to ultra-violet light. Label each roll of geotextile or drain strip in the shipment to identify the production run.

Cement	Section 801, Type I, II, III or IV
Fine Aggregate	Section 804, Concrete Sand
Coarse Aggregate	Section 805, No. 11
Water	Section 803
Chemical Admixtures:	
Accelerator	Section 802, Fluid type, applied at nozzle
Water-reducer and Superplastisizer	Section 802
Retarders	Section 802
Mineral Admixtures:	
Fly Ash	Section 844, Cement replacement up to 35% by weight of cement
Silica Fume	Section 844, 90% minimum silicon dioxide solids content, not to exceed 12% by weight of cement
Welded Steel Wire Fabric	Section 811/AASHTO M55
Reinforcing Bars for Shotcrete Facing	Section 811, Grade 60, deformed
Bearing Plates	ASTM A36
Nuts	AASHTO M291, Class B, hexagonal, fitted with beveled washer or spherical seat to provide uniform bearing
Prepackaged Shotcrete	ASTM C928
Toe Drain Geotextile	Section 843, Type II
Drainage Aggregate	Section 805.08, with no more than 2% passing the No. 200 sieve
Geocomposite Drain Strip	Amerdrain 500 or approved equal
Film Protection	Polyethylene films per AASHTO M-171
PVC Connector and Drain Pipes:	
Pipe	ASTM 1785 Schedule 40 PVC, solid and perforated wall, cell classification 12454-B or 12354-C, wall thickness SDR 35, with solvent weld or elastomeric gasket joints
Fittings	ASTM D3034, cell classification 12454-B or 12454-C, wall thickness SDR35, with solvent weld or elastomeric gasket joints
Solvent Cement	ASTM D2564
Primer	ASTM F656
Section References are in the Kentucky Standard Specifications, Current Edition	

6.4.1 Shotcrete Mix Design Use shotcrete complying with the requirements of ACI 506.2, "Specifications for Materials, Proportioning and Application of Shotcrete", except as otherwise specified. The Contractor must receive notification from the Engineer that the proposed mix design and method of placement are acceptable before shotcrete placement can begin.

6.4.1.1 Proportioning and Use of Admixtures Proportion the shotcrete to be pumpable with the concrete pump furnished for the work, with a cementing materials content of at least 650 lb/cy and water/cement ratio not greater than 0.50. Do not use admixtures unless approved by the Engineer. Thoroughly mix admixtures into the shotcrete at the rate specified by the manufacturer. Use only accelerators compatible with the cement used, non-corrosive to steel, and not promoting other detrimental effects such as cracking or excessive shrinkage. The maximum allowable chloride ion content of all ingredients is 0.10% when tested to AASHTO T260.

6.4.1.2 Air Entrainment Air entrainment is not required for temporary shotcrete construction facings.

6.4.1.3 Strength Requirements Provide shotcrete with a compressive strength of 2000 psi in 3 days and 4000 psi in 28 days. The average compressive strength of each set of three test cores extracted from test panels or wall face must equal or exceed 85 percent of the specified compressive strength, with no individual core less than 75 percent of the specified compressive strength, in accordance with ACI 506.2.

6.4.1.4 Mixing and Batching Batch aggregate and cement by weight or by volume in accordance with the requirements of ASTM C94 or AASHTO M241/ASTM C685. Use mixing equipment that thoroughly blends the materials in sufficient quantity to maintain placing continuity. Produce ready mix shotcrete complying with AASHTO M157. Batch, deliver, and place shotcrete within 90 minutes of mixing. The use of retarding admixtures may extend application time beyond 90 minutes if approved by the Engineer.

Premixed and packaged shotcrete mix may be provided for on-site mixing. Use packages containing materials conforming to the Materials Section. Placing time limit after mixing is per the manufacturers' recommendations.

6.4.2 Field Quality Control Production test panels or test cores from the wall facing are required. Perform shotcreting and coring of test panels using qualified personnel in the presence of the Engineer. Provide equipment, materials, and personnel as necessary to obtain shotcrete cores for testing including construction of test panel boxes, field curing requirements and coring.. Shotcrete final acceptance will be based on the 28-day strength.

Begin shotcrete production work only upon initial approval of the design mix and nozzlemen and continue if the specified strengths are obtained. The shotcrete work by a crew will be suspended if the test results for their work do not satisfy the strength requirements. Change all or some of the following: the mix, the crew, the equipment, or the procedures. Before resuming work, the crew must shoot additional test panels and demonstrate that the shotcrete in the panels

satisfies the specified strength requirements. Provide all work required to obtain satisfactory strength tests at no additional cost to the Department.

6.4.2.1 Production Test Panels Furnish at least one production test panel or, in lieu of production test panels, six 3 inch diameter cores taken from the shotcrete facing, during the first production application of shotcrete and henceforth for every 5000 ft^2 of shotcrete placed. Construct the production test panels simultaneously with the shotcrete facing installation at times designated by the Engineer. Make production test panels with minimum dimensions of 18x18inches square and at least 4 inches thick.

6.4.2.2 Test Panel Curing, Test Specimen Extraction and Testing
Immediately after shooting, field moist cure the test panels by covering and tightly wrapping with a sheet of material meeting the requirements of ASTM C171 until they are delivered to the testing lab or test specimens are extracted. Do not immerse the test panels in water. Do not further disturb test panels for the first 24 hours after shooting. Provide at least six 3 inch diameter core samples cut from each preconstruction test panel and production test panel. Contractor has the option of extracting test specimens from test panels in the field or transporting to another location for extraction. Keep panels in their forms when transported. Do not take cores from the outer 6 inches of test panels measured in from the top outside edges of the panel form. Trim the ends of the cores to provide test cylinders at least 3 inches long. If the Contractor chooses to take cores from the wall face in lieu of making production test panels, the Engineer will designate locations. Clearly mark the cores and container to identify the core locations and whether they are for preconstruction or production testing. If for production testing, mark the section of the wall represented by the cores on the cores and container. Immediately wrap cores in wet burlap or material meeting requirements of ASTM C171 and seal in a plastic bag. Deliver cores to the testing lab within 48 hours of shooting the panels. The remainder of the panels will become the property of the Contractor. Upon delivery to the testing lab, place the samples in the moist room until the time of test. When the test length of a core is less than twice the diameter, apply the correction factors given in AASHTO T24/ASTM C42 to obtain the compressive strength of individual cores. Test three cores will be tested at 3 days and three cores at 28 days in accordance with AASHTO T24/ASTM C42.

Fill core holes in the wall by dry-packing with non-shrink patching mortar after the holes are cleaned and dampened. Do not fill core holes with shotcrete.

6.5 Permanent Concrete Facing

6.5.1 Cast-in-Place Concrete Conform to the Standard Specifications for Class A concrete.

6.5.2 Precast Concrete Panels Conform to the Standard Specifications for Class D or Class D Modified concrete. Obtain panels from an approved Precast Concrete Producer on the KYTC List of Approved Materials.

6.5.3 Reinforcing Steel Conform to the Standard Specifications. Epoxy coating is not required.

6.6 Materials Handling and Storage Comply with the Standard Specifications and the items below:

1. Do not move or transport encapsulated nails until the encapsulation grout has reached sufficient strength to resist damage during handling.
2. Handle encapsulated nails in a manner that will prevent large deflections, distortions or damage.
3. Repair encapsulated nails that are damaged or defective in accordance with the manufacturer's recommendations or remove them from the site.

7.0 MATERIALS TESTING AND ACCEPTANCE

7.1 Materials Sampling and Testing will be in accordance with Section 106 of the Standard Specifications, the Department's current "Kentucky Methods", the current "Manual of Field Sampling and Testing Practices", and other referenced documents.

7.2 Use only materials accepted by the Department before use. The Engineer may suspend work on the wall if the Contractor does not have acceptance of materials to be used and there is no other work on the wall that may be done. If work is suspended due to lack of material acceptance, the Contractor is fully liable for additional cost from the suspension of work. No additional contract time resulting from the suspension of work will be allowed.

8.0 CONSTRUCTION

Construct the wall(s) according to the Contract Plans, Construction Plans, the Standard Specifications, and the requirements below. In all cases, provide materials conforming to the Materials Section of this Special Note.

8.1 Excavation ***Coordinate the work and the excavation so the soil nail wall is safely constructed.*** Perform the wall construction and excavation sequence in accordance with the Construction Plans. Proceed with excavation in stages exposing the minimum amount of soil or rock face that will allow the practical and expeditious application of the shotcrete and the installation of soil nails while assuring stability of the excavated face and minimizing ground movements. Excavate a neatline face to facilitate application of temporary shotcrete and limit excavation in front of walls to 2 ft. below any soil nail until that nail has been completed and tested (if applicable). Leave temporary excavation lifts open no more than 24 hours without the temporary shotcrete facing or nails installed. After temporary shotcrete has been applied, excavate the next lift only after the shotcrete strength reaches 2000 psi .

8.2 Drilling Drill holes for soil nails at the locations shown in the Construction Plans. Use drilling methods and soil nail lengths necessary to develop adequate load capacity to satisfy testing acceptance criteria for the design load required, but not less than the lengths and diameters shown on the Construction Plans. It is the Contractor's responsibility to choose drilling methods that will maintain open drill holes and that do not promote mining or loosening of the soil at the perimeter of the drill hole or fracture soil with weak stratification planes by use of high flush volumes and pressures. At the ground surface, locate the drill hole within 6 inches of the location shown on the Construction Plans. At the point of entry, angle the nail within plus or minus 3^{o} of that shown on the Construction Plans. Do not extend the nails beyond the right-of-way or easement limits shown in the Contract Plans provided in the contract documents.

8.3 Nail Installation Place centralizers as shown in the Construction Plans as necessary for corrosion protection.

8.4 Grouting Provide grouting equipment capable of continuous mixing and producing a grout free of lumps. Place nails in each drilled hole either prior to grouting or within 15 minutes of the grout injection. Grout until the hole is completely filled with grout and clean grout is seen to run from the top of the hole. Accomplish mortar packing and secondary grouting to the wall face as soon as practical after nail installation. Provide secondary grouting to the small ungrouted zone at the face and place a bearing plate over the bar and dry pack with cement or a cement mortar to provide even bearing against the shotcrete face.

Test grout according to AASHTO T106/ASTM C109 at a frequency of no less than one test every 50 CY of grout placed. Provide grout cube test results to the Engineer within 24 hours of testing.

8.5 Temporary Shotcrete and Wall Drainage Shotcrete facing and wall drainage work consists of furnishing all materials and labor required for placing and securing geocomposite drainage material, connection pipes, weepholes and horizontal drains (if required), drainage gutter, reinforcing steel and shotcrete for the temporary shotcrete construction facing and nail head bearing plates and nuts for the soil nail walls. The Work includes any preparatory trimming and cleaning of soil/rock surfaces and shotcrete cold joints to receive new shotcrete.

Use shotcrete complying with the requirements of ACI 506.2, "Specifications for Materials, Proportioning and Application of Shotcrete", except as otherwise specified. Shotcreting consists applying of one or more layers of concrete conveyed through a hose pneumatically projected at a high velocity against a prepared surface.

Produce shotcrete by either a wet-mix or dry-mix process. The wet-mix process consists of thoroughly mixing all the ingredients except accelerating admixtures, but including the mixing water, introducing the mixture into the delivery equipment and delivering it, by positive displacement, to the nozzle. Air jet the wet-mix shotcrete from the nozzle at high velocity onto the surface. The dry-mix process consists of shotcrete without mixing water that is conveyed through the

hose pneumatically with the mixing water introduced at the nozzle. For additional descriptive information, refer to the American Concrete Institute ACI 506R "Guide to Shotcrete."

All temporary shotcrete and wall drainage construction is incidental to the Contract Unit Bid Price for “Soil Nail Wall” per “Square Foot”.

8.6 Wall Drainage Network Install and secure all elements of the wall drainage network as shown in the Construction Plans, specified herein, or as required to suit the site conditions. Install geocomposite drain strips and PVC connection pipes as shown on the Construction Plans. Install all elements of the drainage network prior to shotcreting. Capture unanticipated subsurface drainage features exposed in the excavation cut face independently of the wall drainage network and mitigate prior to shotcrete application.

8.6.1 Geocomposite Drain Strips Install geocomposite drain strips centered between offset nail columns as shown in the Construction Plans. The maximum horizontal spacing between drain strips is 5 feet. Use drain strips at least 12 inches wide and place the geotextile side against the ground. Secure the strips to the excavation face and prevent shotcrete from contaminating the ground side of the geotextile. Install vertically continuous drain strips. Make splices with a 12 inch minimum overlap such that the flow of water is not impeded. Repair damage to the geocomposite drain strip, which may interrupt the flow of water.

8.6.2 Toe Drains If required, install toe drains at the bottom of each wall. Wrap the drainage geotextile around the toe drain aggregate and pipe and conform to the dimensions of the trench. Conform to Section 214 of the Standard Specifiations for Geotextile Construction. Overlap the drainage geotextile on top of the drainage aggregate as shown in the Construction Plans. Replace or repair damaged or defective drainage geotextile.

8.6.3 Connection Pipes and Weepholes Install connection pipes as shown in the Construction Plans. Connection pipes are lengths of solid PVC pipe installed to direct water from the geocomposite drain strips to the exposed face of the wall. Connect the connection pipes to the drain strips using either prefabricated drain grates as shown in the Construction Plans or using the alternate connection method described below. Install the drain grate per the manufacturer's recommendations. Seal the joint between the drain grate and the drain strip and the discharge end of the connector pipe to prevent shotcrete intrusion.

The alternative acceptable method for connection of the connector pipe to the drain strip involves cutting a hole slightly larger than the diameter of the pipe into the strip plastic core but not through the geotextile. Wrap both ends of the connection pipe in geotextile in a manner that prevents migration of fines through the pipe. Tape or seal the inlet end of the pipe where it penetrates the drain strip and the discharge end of the connector pipe in a manner that prevents penetration of shotcrete into the drain strip or pipe. To assure passage of groundwater from the drain strip into the connector pipe, slot the inlet end of the

connector pipe at every 45 degrees around the perimeter of the pipe to a depth of ¼ inch.

Provide weepholes, if required, through the construction facing to drain water from behind the facing. Install as shown in the Construction Plans. Use PVC pipe to form the weephole through the shotcrete. Cover the end of the pipe contacting the soil with a drainage geotextile. Prevent shotcrete intrusion into the discharge end of the pipe.

8.7 Temporary Shotcrete Construction Facing

8.7.1 Shotcrete Alignment and Thickness Control Ensure that the minimum thickness of shotcrete that shown in the Construction Plans, using shooting wires, thickness control pins, or other devices acceptable to the Engineer. Install thickness control devices normal to the surface such that they protrude the required shotcrete thickness outside the surface. Ensure that the front face of the shotcrete does not extend beyond the limits shown in the Construction Plans.

8.7.2 Surface Preparation Clean the face of the excavation and other surfaces to be shotcreted of loose materials, mud, rebound, overspray or other foreign matter that could prevent or reduce shotcrete bond. Protect adjacent surfaces from overspray during shooting. Avoid loosening, cracking, or shattering the ground during excavation and cleaning. Remove any surface material that is so loosened or damaged, to a sufficient depth to provide a base that is suitable to receive the shotcrete. Remove material that loosens as the shotcrete is applied. The cost of additional shotcrete is incidental to the work. Divert water flow and remove standing water so that shotcrete placement will not be detrimentally affected by standing water. Do not place shotcrete on frozen surfaces.

8.7.3 Delivery and Application Maintain a clean, dry, oil-free supply of compressed air sufficient for maintaining adequate nozzle velocity at all times. Use equipment capable of delivering the premixed material accurately, uniformly, and continuously through the delivery hose. Control shotcrete application thickness, nozzle technique, air pressure, and rate of shotcrete placement to prevent sagging or sloughing of freshly-applied shotcrete.

Apply the shotcrete from the lower part of the area upward to prevent accumulation of rebound. Orient nozzle at a distance and approximately perpendicular to the working face so that rebound will be minimal and compaction will be maximized. Pay special attention to encapsulating reinforcement. Do not work rebound back into the construction. Where shotcrete is used to complete the top ungrouted zone of the nail drill hole near the face, position the nozzle into the mouth of the drillhole to completely fill the void.

A clearly defined pattern of continuous horizontal or vertical ridges or depressions at the reinforcing elements after they are covered with shotcrete will be considered an indication of insufficient reinforcement cover or poor nozzle techniques. In this case immediately suspend the application of shotcrete and

implement corrective measures before resuming the shotcrete operations. Correct the shotcreting procedure by adjusting the nozzle distance and orientation, by insuring adequate cover over the reinforcement, by adjusting the water content of the shotcrete mix or other means. Adjustment in water content of wet-mix will require requalifying the shotcrete mix.

8.7.4 Defective Shotcrete Repair shotcrete surface defects as soon as possible after placement. Remove and replace shotcrete that exhibits segregation, honeycombing, lamination, voids, or sand pockets. In-place shotcrete not meeting the specified strength requirement will be subject to remediation. Possible remediation options include placement of additional shotcrete thickness or removal and replacement, at no additional cost to the Department.

8.7.5 Construction Joints Taper construction joints uniformly toward the excavation face over a minimum distance equal to the thickness of the shotcrete layer. Provide a minimum reinforcement overlap at reinforcement splice joints as shown in the Construction Plans. Clean and wet the surface of a joint before adjacent shotcrete is applied. Where shotcrete is used to complete the top ungrouted zone of the nail drill hole near the face, to the maximum extent practical, clean and dampen the upper grout surface to receive shotcrete, similar to a construction joint.

8.7.6 Finish Use either an undisturbed gun finish as applied from the nozzle or a rough screeded finish. Remove shotcrete extending into the CIP finish face section beyond the tolerances specified herein.

8.7.7 Attachment of Nail Head Bearing Plate and Nut Attach a bearing plate and nut to each nail head as shown on the Construction Plans. While the shotcrete is still plastic and before its initial set, uniformly seat the plate on the shotcrete by hand wrench tightening the nut. Where uniform contact between the plate and the shotcrete cannot be provided, set the plate in a bed of grout. After grout has set for 24 hours, tighten the nut using a hand wrench. Ensure bearing plates with headed studs are in intimate contact with the construction facing and the studs are located within the tolerances shown in the Construction Plans or specified herein.

8.7.8 Weather Limitations Protect the shotcrete if it must be placed when the ambient temperature is below 32^{o}F and falling or when it is likely to be subjected to freezing temperatures before gaining sufficient strength. Maintain cold weather protection until the in-place compressive strength of the shotcrete is greater than 700 psi. Cold weather protection includes blankets, heating under tents, or other means acceptable to the Engineer. Deposit the shotcrete mix at a temperature of not less than 50^{o}F or more than 95^{o}F.

Suspend shotcrete application during high winds and heavy rains unless suitable protective covers, enclosures or wind breaks are installed. Remove and replace newly placed shotcrete exposed to rain that washes out cement or otherwise makes the shotcrete unacceptable. Provide a polyethylene film or equivalent to protect the work from exposure to adverse weather.

8.7.9 Curing Curing is not required for temporary construction facings to be covered by a CIP facing or whose service life is less than 36 months.

8.7.10 Construction Facing Tolerances

Construction Tolerances for Temporary Shotcrete Construction Facing	
Horizontal Location of Wire Mesh; Rebar; Headed Studs on Bearing Plates, from Plan location	+/- 0.6 inch
Headed studs location on bearing plate, from plan location	0.25 inch
Spacing between reinforcing bars, from plan dimension	1 inch
Reinforcing lap, from specified dimension	1 inch
Thickness of shotcrete	0.4 inch
Nail head bearing plate, deviation from parallel to wall face	10 degrees

8.7.11 Safety Requirements Equip nozzlemen and helpers with gloves, eye protection, and adequate protective clothing during the application of shotcrete. The Contractor is responsible for meeting all federal, state and local safety code requirements.

8.8 Backfilling Behind Wall Facing Upper Cantilever If possible, compact backfill within 3 ft. behind the wall facing upper cantilever using light mechanical tampers.

8.9 CIP Concrete Form or PC Panel Connection to Shotcrete Facing
When mechanical, grouted, or epoxied anchors embedded into the shotcrete facing are used to support a one-sided CIP face form or PC Panel, perform pullout testing of the embedded anchors in accordance with ASTM C900 and as modified herein. Perform pullout testing of installed anchors prior to attachment of the face form. Select test anchor locations to be representative of the full wall surface area to be covered.

For facing areas up to 5000 ft^2, perform a minimum of three flexure/shear pullout tests with the anchor located approximately mid-span between two adjacent nail heads and with the nail heads or other reaction points located approximately one-half the nail spacing from the anchor. For facing areas in excess of 5000 ft^2, perform one additional flexure/shear pullout test for each additional 2500 ft^2 of face area. Test these anchors to 1.5 times their required design load (calculated as the design concrete fluid pressure times the anchor tributary area).

Perform local punching shear pullout testing on 2 percent of the installed anchors. Place the load reaction support no closer to the edge of the anchor than the embedment depth of the anchor into the construction facing. Test these anchors to 2.0 times their required design load.

Modify the anchor and/or face form support system if the tested anchors do not meet the above test acceptance criteria. Modified anchor installation will require

re-testing in accordance with the above testing criteria. Cost of anchor pullout testing is incidental to the work.

8.10 Wall Alignment and Permanent Facing Ensure that the wall is compatible with the horizontal and vertical alignment indicated in the Contract Plans. Survey control is the front face of the wall. Construct the exposed face of the wall to be straight and smooth with no discontinuities. Protrusions beyond the face of the walls are not allowed. Completely fill any voids between the temporary and permanent facing with shotcrete or grout. Provide architectural treatment for concrete facing if shown in the Contract Plans.

8.11 Site Drainage Control Provide positive control and discharge of all surface water that will affect construction of the soil nail retaining wall. Maintain all pipes or conduits used to control surface water during construction. Repair damage caused by surface water at no additional cost. Upon substantial completion of the wall, remove surface water control pipes or conduits from the site. Alternatively, with the approval of the Engineer, pipes or conduits that are left in place, may be fully grouted and abandoned or left in a way that protects the structure and all adjacent facilities from migration of fines through the pipe or conduit and potential ground loss.

If water is used in the drilling operation, dispose of the water in such a manner that erosion in the vicinity of the wall is minimized. The Contractor is cautioned against the indiscriminate use of water that could create unstable slopes above and/or below the wall. Immediately repair any damage to the site by water or erosion at no cost to the Department.

9.0 SOIL NAIL TESTING AND ACCEPTANCE REQUIREMENTS

9.1 General Perform both verification and proof testing on designated test nails and record required nail test data. Perform nail testing after the nail grout and shotcrete facing have cured for at least 72 hours and attained at least their specified 3-day compressive strength. Perform testing in less than 72 hours only if compressive strength test results, for tests performed verifies that the nail grout and shotcrete mixes being used will provide the specified 3-day compressive strengths in less time.

Specified test nail locations and/or testing frequencies are provided in an Appendix to this Special Note.

Test each production nail designated for testing within 21 calendar days of installation and provide a written summary of the test results to the Engineer within 7 calendar days after each test; include the following:

1. bonded and unbonded lengths
2. jacking length
3. bar size and area

Failure to begin testing within the specified time and/or failure to meet the submittal deadlines for nail test results may result in the Engineer suspending soil nail installation.

The Department will not make separate payment for the testing required in this section. All testing required in this section is included in the price of the wall(s).

9.2 Testing Equipment Testing equipment includes 2 dial gauges, dial gauge support, jack and pressure gauge, electronic load cell, and a reaction frame. The load cell is required only for the creep test portion of the verification test. Provide a description of test setup and jack, pressure gauge and load cell calibration curves in accordance with the submittals section of this Special Note.

Design the testing reaction frame to be sufficiently rigid and of adequate dimensions such that excessive deformation of the testing equipment does not occur. If the reaction frame will bear directly on the shotcrete facing, design it to prevent cracking of the shotcrete. Independently support and center the jack over the nail bar so that the bar does not carry the weight of the testing equipment. Align the jack, bearing plates, and stressing anchorage with the bar such that unloading and repositioning of the equipment will not be required during the test.

Apply and measure the test load with a hydraulic jack and pressure gauge. Use a pressure gauge graduated in 75 psi increments or less. Use a jack and pressure gauge with a pressure range not exceeding twice the anticipated maximum test pressure. Use a jack with a ram travel no less than 125% of the anticipated maximum movement and sufficient travel to allow the test to be done without resetting the equipment. Monitor the nail load during verification tests with both the pressure gauge and the load cell. Use the load cell to maintain constant load hold during the creep test load hold increment of the verification test.

Measure the nail head movement with a minimum of 2 dial gauges capable of measuring to 0.001 inch. Use a dial gauge with a travel no less than 125% of the anticipated maximum movement and travel sufficient to allow the test to be done without having to reset the gauge. Visually align the gauge to be parallel with the axis of the nail and support the gauge independently from the jack, wall or reaction frame. Use two dial gauges when the test setup requires reaction against a soil cut face.

9.3 Verification Testing of Sacrificial Test Nails Perform verification testing of sacrificial test nails to verify the installation methods and design nail pullout resistance. Sacrificial test nails will not be incorporated as production nails. Perform verification tests to failure, or no less than 3.0 times the allowable pullout resistance. Bare bars can be used for the sacrificial verification test nails.

Develop and submit the details of the verification testing arrangement including the method of distributing test load pressures to the excavation surface (reaction frame), test nail bar size, grouted drillhole diameter and reaction frame dimensioning to the Engineer for approval in accordance with the Construction Submittals section. Construct verification test nails using the same equipment, installation methods, nail inclination, and drillhole diameter as planned for the production nails. Changes in the drilling or installation method may require additional verification testing as determined by the Engineer at no additional cost to the Department.

Use test nails with both bonded and temporary unbonded lengths. Prior to testing, grout only the bonded length of the test nail. Use a temporary unbonded length of at least 3 ft. Determine the bonded length of the test nail based on the production nail bar grade and size such that the allowable bar structural load is not exceeded during testing; use a bonded length not less than 10 ft. The maximum allowable bar structural load during testing is 90% of the yield strength for Grade 60 and Grade 75 bars, or 80% of the ultimate strength for Grade 150 bars. Provide larger verification test bar sizes, if required to safely accommodate the 10 ft. minimum test bond length and test to failure, at no additional cost to the Department.

Use the following equation for determining the verification test nail maximum bonded length to be used to avoid structurally overstressing the verification test nail bar size:

$L_{BV} =$ $(C\ f_Y\ A_S) / (3\ Q_d)$, or 10 ft., whichever is greater.

L_{BV} = Maximum Verification Test Nail Bonded Length (ft.)
C = 0.9 for Grade 60 and 75 bars and 0.8 for Grade 150 bars
f_Y = Bar Yield or Ultimate Stress (ksi)
(f_Y = 60, 75, and 150 ksi, respectively, for Grade 60, 75 and 150 bars)
A_S = Bar Steel Area (in^2)
3 = Factor of Safety against tensile failure during a Verification Test
Q_d = Allowable pullout resistance (kips/ft., kips per linear foot of grouted nail lengths specified in the Construction Plans)

Determine the Design Test Load (DTL) during verification testing by the following equation:

DTL = Design Test Load (kips) = L_{BV} x Q_d

L_{BV} = As-built bonded test length (ft.)
Q_d = Allowable pullout resistance (kips/ft., kips per linear foot of grouted nail length specified in the Construction Plans)
MTL= 3.0 x DTL = Maximum Test Load (kips)

Incrementally load verification test nails to failure or a maximum test load of 300 percent of the Design Test Load (DTL) in accordance with the following loading schedule. Record the soil nail movements at each load increment.

Verification Test of Sacrificial Nails
Loading Schedule

Step	Load	Hold Time
1	AL (0.05 DTL max.)	1 minute
2	0.25 DTL	10 minutes
3	0.50 DTL	10 minutes
4	0.75 DTL	10 minutes
5	1.00 DTL (Creep Test)	30 minutes
6	1.25 DTL (Creep Test)	60 minutes
7	1.50 DTL (Creep Test)	300 minutes
8	1.75 DTL	10 minutes
9	2.00 DTL	10 minutes
10	2.50 DTL or Failure	10 minutes max.
11	3.00 DTL or Failure	10 minutes max.
12	AL (0.05 DTL max.)	1 minute (record permanent set)
AL – Alignment Load, DTL – Design Test Load		

The alignment load (AL) should be the minimum load required to align the testing apparatus and should not exceed 5 percent of the Design Test Load (DTL). Dial gauges should be set to "zero" after the alignment load has been applied. Following application of the maximum test load (3.0 DTL) reduce the load to the alignment load (0.05 DTL maximum) and record the permanent set.

Hold each load increment for at least 10 minutes. Monitor the verification test nail for creep at the 1.00 DTL, 1.25 DTL, and 1.50 DTL load increments. Measure and record nail movements during the creep portion of the test (as applicable) at 1 minute, 2, 3, 5, 6, 10, 15, 20, 25, 30, 45, 60, 75, 90, 100, 150, 180, 210, 240, 270, and 300 minutes. Maintain the load during the creep test within 2 percent of the intended load by use of the load cell.

9.4 Verification Testing of Production Nails Perform verification testing of production nails using the same procedures as for verification testing of sacrificial nails with the following exceptions:

1. The specified corrosion protection is required (bare bars are not allowed).
2. The Maximum Test Load is 2.00 DTL.
3. Creep testing is required only at a load of 1.50 DTL and the creep portion of the test is 60 minutes.

Verification Test of Production Nails Loading Schedule

Step	Load	Hold Time
1	AL (0.05 DTL max.)	1 minute
2	0.25 DTL	10 minutes
3	0.50 DTL	10 minutes
4	0.75 DTL	10 minutes
5	1.00 DTL	10 minutes
6	1.25 DTL	10 minutes
7	1.50 DTL (Creep Test)	60 minutes
8	1.75 DTL	10 minutes
9	2.00 DTL	10 minutes
10	AL (0.05 DTL max.)	1 minute (record permanent set)
AL – Alignment Load, DTL – Design Test Load		

Hold each load increment for at least 10 minutes. Monitor the verification test nail for creep at the 1.50 DTL load increment. Measure and record nail movements during the creep portion of the test at 1 minute, 2, 3, 5, 6, 10, 20, 30, 50, and 60 minutes. Maintain the load during the creep test within 2 percent of the intended load by use of the load cell.

9.5 Proof Testing of Production Nails Provide temporary unbonded lengths for each test nail. Isolate the test nail bar from the shotcrete facing and/or the reaction frame used during testing. Isolation of a test nail through the shotcrete facing will not affect the location of the reinforcing steel under the bearing plate. Submit the proposed test nail isolation methods, methods for providing an unbonded test length and methods for grouting the unbonded length subsequent to testing to the Engineer in accordance with the Construction Submittals section. Where temporary casing of the unbonded length of test nails is provided, install the casing in a way that prevents any reaction between the casing and the grouted bond length of the nail and/or the stressing apparatus.

Use production proof test nails with both bonded and temporary unbonded lengths. Prior to testing grout only the bonded length of the test nail. The

minimum temporary unbonded length of the test nail is 3 ft. Determine the bonded length of the test nail based on the production nail bar grade and size such that the allowable bar structural load is not exceeded during testing. The maximum allowable bar structural load during testing is 90 percent of the yield strength for Grade 60 and Grade 75 bars, or 80 percent of the ultimate strength for Grade 150 bars.

Use the following equation for sizing the proof test nail bonded length to avoid overstressing the production nail bar size:

$L_{BP} = (C\ f_Y\ A_S) / (1.5\ Q_d)$, or 10 ft., whichever is greater. *

L_{BP} = Maximum Proof Test Nail Bonded Length (ft.)
C = 0.9 for Grade 60 and 75 bars and 0.8 for Grade 150 bars
f_Y = Bar Yield or Ultimate Stress (ksi)
(f_Y = 60, 75, and 150 ksi, respectively, for Grade 60, 75 and 150 bars)
A_S = Bar Steel Area (in^2)
1.5 = Factor of Safety against tensile failure during a Proof Test
Q_d = Allowable pullout resistance (kips/ft., kips per linear foot of grouted nail length specified in the Construction Plans)

* Production proof test nails shorter than 12 ft. in length may be constructed with less than the minimum 10 ft. bond length; however the unbonded length is limited to 3 ft.

Determine the Design Test Load (DTL) during verification testing by the following equation:

DTL = Design Test Load (kips) = L_{BP} x Q_d

L_{BP} = As-built bonded test length (ft.)
Q_d = Allowable pullout resistance (kips/ft., kips per linear foot of grouted nail length specified in the Construction Plans)
MTL = 1.5 x DTL = Maximum Test Load (kips)

Perform proof tests by incrementally loading the proof test nail to a maximum test load of 150 percent of the Design Test Load (DTL). Measure and record the nail movement at each load in the same manner as for verification tests. Monitor the test load by a jack pressure gauge with a sensitivity and range meeting the requirements of pressure gauges used for verification test nails. At load increments other than maximum test load, hold the load long enough to obtain a stable reading. Apply incrementally loads in accordance with the following loading schedule. Record the soil nail movements at each load increment

Proof Test Loading Schedule		
Step	**Load**	**Hold Time**
1	AL (0.05 DTL max.)	Until Stable
2	0.25 DTL	Until Stable
3	0.50 DTL	Until Stable
4	0.75 DTL	Until Stable
5	1.00 DTL	Until Stable
6	1.25 DTL	Until Stable
7	1.50 DTL (Max Test Load)	Creep Test (See Below)
AL – Alignment Load, DTL – Design Test Load		

The alignment load (AL) should be the minimum load required to align the testing apparatus and should not exceed 5 percent of the Design Test Load (DTL). Dial gauges should be set to "zero" after the alignment load has been applied.

Start the creep tests as soon as the maximum test load (1.50 DTL) is applied. Depending on performance, perform either 10 minute or 60 minute creep tests at the maximum test load (1.50 DTL). Start the creep period as soon as the maximum test load is applied and measure and record the nail movement at 1 minute, 2, 3, 5, 6, and 10 minutes. Where the nail movement between 1 minute and 10 minutes exceeds 0.04 inches, maintain the maximum test load an additional 50 minutes and record movements at 20 minutes, 30, 50, and 60 minutes. Maintain all load increments within 5 percent of the intended load.

9.6 Test Nail Acceptance Criteria A test nail is considered acceptable when all of the following criteria are met:

1. For verification tests on sacrificial nails, a total creep movement of less than 0.08 inches per log cycle of time over the final log cycle of time of each load increment (between 3 and 30 minutes for 1.00 DTL, 6 and 60 minutes for 1.25 DTL, 30 and 300 minutes for 1.50 DTL) and the creep rate is linear or decreasing throughout the creep test load hold period.
2. For verification tests on production nails, a total creep movement of less than 0.08 inches between the 6 and 60 minute readings is measured during creep testing and the creep rate is linear or decreasing throughout the creep test load hold period.
3. For proof tests, a total creep movement of less than 0.04 inches is measured between the 1 and 10 minute readings, or a total creep movement of less than 0.08 inches is measured between the 6 and 60 minute readings and the creep rate is linear or decreasing throughout the creep test load hold period.
4. For verification tests, the total measured movement at 2.0 x DTL exceeds 80% of the theoretical elastic elongation of the test nail unbonded length.
5. For proof tests, the total measured movement at 1.5 x DTL exceeds 80% of the theoretical elastic elongation of the test nail unbonded length.
6. A pullout failure does not occur prior to or at 2.0 x DTL during verification testing of sacrificial or production nails or 1.5 x DTL during proof testing.

Pullout failure is defined as the load at which attempts to further increase the test load simply result in continued pullout movement of the test nail. Record the pullout failure load as part of the test data.

Successful verification or proof tested production nails meeting the above test acceptance criteria may be incorporated as production nails, provided that (1) the unbonded length of the test nail drillhole has not collapsed during testing, (2) the minimum required drillhole diameter has been maintained, (3) the specified corrosion protection is provided, and (4) the test nail length is equal to or greater than the scheduled production nail length. Complete test nails meeting these requirements by satisfactorily grouting up the unbonded test length. Maintain the temporary unbonded test length for subsequent grouting. If the unbonded test length of production proof test nails cannot be satisfactorily grouted subsequent to testing, replace with an additional production nail installed at no additional cost.

9.7 Test Nail Rejection If a test nail does not satisfy the acceptance criterion, the Engineer will implement the procedures below.

1. For Verification Tests on Sacrificial Nails, the Engineer will evaluate the results of each verification test and will reject installation methods that do not satisfy the nail testing requirements. Propose alternative methods and install replacement verification test nails. Install and test replacement test nails at no additional cost to the Department and with no extension of contract time. The Engineer may require the Contractor to replace some or all of any production nails installed prior to acceptance of Sacrificial Nails; alternatively, the Engineer may require additional verification or proof tests on these production nails.
2. For Verification or Proof Tests on Production Nails, the Engineer may require the Contractor to replace some or all of the installed production nails between a failed test nail and the adjacent passing test nail. Alternatively, the Engineer may require the installation and testing of additional test nails to verify that adjacent previously installed production nails have sufficient load carrying capacity. Contractor modifications may include, but are not limited to: the installation of additional test nails; increasing the drillhole diameter to provide increased capacity; modifying the installation or grouting methods; reducing the production nail spacing from that shown on the Construction Plans and installing more production nails at a reduced capacity; or installing longer production nails if sufficient right-of way is available and the pullout capacity behind the failure surface controls the allowable nail design capacity. The nails may not be lengthened beyond the right-of-way or easement. Installation and testing of additional test nails or installation of additional or modified nails as a result of test nail failure(s) will be at no additional cost to the Department.

10.0 RECORDS

Provide the Engineer with the following final records:

1. As-built drawings showing:
   a. The actual location and orientation of the soil nails, including deviation from specified tolerances.
   b. Nail capacity, nail type, installed drillhole and bar diameter, designed and installed nail length.
   c. The type of testing performed for each soil nail and test results.
   d. The locations of any instrumentation installed and any required instrumentation records.
   e. Finished ground line elevations behind the wall and finished grade elevations in front of the wall.
2. Other records as required by Section 106 of the Standard Specifications.
3. Structural Steel records required by Section 607 of the Standard Specifications.
4. Record plans conforming to Section 105.03 of the Standard Specifications.
5. Construction Records including:
   a. Contractor's name
   b. Drill rig operator's name
   c. Date and time of start and finish of drilling
   d. Drilling difficulties
   e. Caving or sloughing of excavation or drillhole
   f. Groundwater conditions
   g. Drill casing requirements
   h. Grouting records including:
      date, time and method grout was placed
      cement type
      volume of grout placed
      grout pressure

11.0 MEASUREMENT AND PAYMENT

11.1 The Department will pay for the accepted quantities of "Soil Nail Wall" at the contract unit bid price per "Square Foot" and will measure quantities as shown in the Contract Plans. This will constitute full compensation for all costs including materials, labor, tools, equipment, and other incidental items required for designing, constructing, and performing nail testing for the permanent soil nail wall(s) as described herein. This may include but is not limited to the following items: installing sacrificial and production soil nails, providing corrosion protection, shotcrete, concrete facing (if required), wall drainage, toe drainage, surface drainage, anchorage hardware, verification tests, proof tests, all required submittals and records, and other incidental items necessary to provide a complete permanent soil nail wall. Earth moving, backfilling, drainage, any temporary shoring due to phased construction, and any other earthwork

necessary to complete these walls and not included in other bid items, is included as an incidental part of this work.

11.2 Additional areas of wall, required due to unforeseen foundation conditions or other reasons and approved in writing by the Engineer will be paid at the contract unit prices. In the event a decrease in the area of a wall is required, subject to acceptance by the Department, payment will be reduced due to the decrease in the wall area or length.

11.3 All measurement will be based on plan dimensions or dimensions as ordered in writing.

11.4 Refer to an Appendix to this Special Note for Project Specific Measurement and Payment information.

Code	**Pay Item**	**Pay Unit**
20603ED	Soil Nail Wall	Square Foot

Special Note for Soil Nail Walls
Appendix A - Project Specific Requirements

Hopkins County
EB 9004, Retaining Wall
Item No. 2-8633.00

A1.0 VALUE ENGINEERING

The Department will not consider any Value Engineering Proposals that would result in changes in wall location and/or elevations.

A2.0 SUBSURFACE CONDITIONS

The subsurface conditions encountered at test boring locations are presented on the Subsurface Data Sheets in the Contract Plans. Subsurface Conditions may vary between boring locations.

A3.0 LOCATIONS OF EXISTING STRUCTURE UNITS

Approximate locations and elevations of the existing substructure and superstructure units are provided in the Contract Plans. These locations are based on plans in the Department's archives. However, the Department does not guarantee the accuracy of these locations. Although no specific scale is provided, the existing structure locations were drawn approximately to scale. Field verify the locations of existing structure units, including footing elevations, prior to excavating and installing soil nails.

The existing bridge plans are Drawing No. 14076. Plans for information only are available from archive records. Contact the Division of Structural Design at 502-564-4560.

A4.0 GROUNDWATER CONTROL

Observation wells were not installed at this location. The groundwater levels are expected to be near the original ground surface. The area is known to flood on occasion, and the 100 year high water elevation at the structure is 403.88 feet. Temporary sheeting, shoring, or dewatering methods may be needed for groundwater control during construction. Appropriate drainage systems behind the wall and weep holes shall also be provided.

A5.0 SITE INSPECTIONS

During construction, observe the conditions behind the soil nail walls on a daily basis for signs of ground movement in the vicinity of the wall. Notify the Engineer immediately if signs of movements such as new cracks or increased size of old cracks are observed. If the Engineer determines that the movements exceed those anticipated for typical soil nail wall construction and requires corrective action, immediately take corrective actions necessary to stop the movement or perform repairs at no additional cost to the Department.

A6.0 FIELD ADJUSTMENTS AND CONSTRUCTION TOLERANCES

Field adjustments of nail locations may be necessary due to the existing structure units or other considerations. Redesign and/or additional analyses will be required for field adjustments exceeding the specified tolerances.

A7.0 PERMANENT FACING

Provide permanent facing consisting of cast-in-place concrete. Conform to applicable sections of FHWA Geotechnical Engineering Circular No. 7 for any items not addressed in the contract proposal or plans. Construct the permanent facing within 2 months of nail installation.

A8.0 SACRIFICIAL TEST NAILS

Prior to installing any production nails, install a minimum of one non-production sacrificial test nail.

Submit the proposed locations and sacrificial test nail design with the wall design and construction plans. Install the sacrificial test nails using the drilling and grouting procedures to be used on the production nails. Conduct Verification Tests on the sacrificial nails as described in Section 9.3 of this Special Note within five (5) calendar days after completing the installation and submit the test results within two (2) calendar days after completing the test. Acceptance criteria and rejection procedures are in Sections 9.6 and 9.7.

If a sacrificial test nail is loaded to 2.5 x DTL or higher during a verification test and meets all acceptance criteria, the Contractor may reduce the diameter of production nails in the adjacent wall based on the ultimate bond stress measured during the verification test. The Contractor assumes all responsibility for providing production nails meeting the acceptance criteria. All minimum cover and/or any other design requirements are applicable for the reduced diameter nails. The Engineer may require revisions to the Construction Plans. Any modifications proposed by the Contractor other than the drill hole diameter will require a detailed review by the Department.

The Contractor may, at its own risk, install production nails before the Engineer receives the Verification Test results and accepts the non-production sacrificial nails. Production nails may not be installed until after verification testing on the sacrificial nail has been performed. The Engineer may suspend production nail installation if the Contractor has not submitted the verification test results on the sacrificial nail within two (2) calendar days after completion of the test.

A9.0 PRODUCTION NAIL VERIFICATION TESTING

Perform a minimum of six (6) verification tests on production nails according to Section 9.4 and the test schedule below.

Production Nail Verification Test Schedule South and North Walls	
Top Row	Approximate Wall Stations 10+60, 11+20, & 11+80
2nd Row	Approximate Wall Stations 10+80 & 11+60
3rd Row & Subsequent Rows (If Needed)	Approximate Wall Station 11+20

A10.0 PRODUCTION NAIL PROOF TESTING

Perform proof tests according to Section 9.5 on a minimum of 5% of nails installed, including the first nail installed in each row. A verification test of a production nail will be considered equivalent to a proof test nail and will be accounted for in determining the number of proof tests required. If problems occur during nail installation that, in the opinion of the Engineer, may adversely affect the capacity of one or more nails, the Engineer may specify nails for proof testing or may require additional proof testing.

A11.0 SUMMARY OF LABORATORY TEST DATA

Table 1
Summary of SPT "N" Values and Soil Index Laboratory Test Results

Hole No.	Sample Depth (ft)	Sample Type	SPT "N" Value	w (%)	LL	PL	PI	LI	Soil Classification		% Silt + Clay
									AASHTO	Unified	
1019	2.0-4.0	ST	-	22	24	19	5	0.53	A-4(0)	CL-ML	55
	4.5-6.5	ST	-	25	31	21	10	0.39	A-4(9)	CL	95
	9.5-11.5	ST	-	24	27	22	5	0.37	A-4(4)	ML	94
	14.5-16.5	ST	-	23	27	16	11	0.66	A-6(4)	CL	59
	19.5-21.0	SP	2	17	20	16	4	0.27	A-4(0)	CL-ML	59
	24.5-26.0	SP	9								
	29.5-31.0	SP	10	23	22	17	5	1.14	A-4(1)	CL-ML	64
	34.5-36	SP	4								
1020	2.0-4.0	ST	-	18	33	18	15	0.02	A-6(11)	CL	81
	5.0-7.0	ST	-	24	38	20	18	0.23	A-6(11)	CL	72
	10.0-12.0	ST	-	21	35	18	17	0.20	A-6(9)	CL	65
	15.0-17.0	ST	-	19	36	19	17	0.01	A-6(10)	CL	70
	20.0-21.5	SP	8	18	33	18	15	0.03	A-6(7)	CL	61
	25.0-26.5	SP	13	19	36	18	18	0.03	A-6(15)	CL	88
	31.0-31.5	SP	9								
	35.0-36.5	SP	3	25	33	21	12	0.33	A-6(100	CL	89
	40.0-41.5	SP	7								
	45.0-46.5	SP	8	19	28	17	11	0.20	A-6(7)	CL	81
	50.0-51.5	SP	6								
	55.0-56.5	SP	8	23	0	0	0	0.00	A-2-4(0)	SM	26
	60.0-61.5	SP	0	27	0	0	0	0.00	A-4(0)	SM	40
	65.0-66.5	SP	2								
1021	2.0-4.0	ST	-	15	36	20	15	-0.36	A-6(12)	CL	83
	5.0-7.0	ST	-	26	28	22	6	0.61	A-4(4)	CL-ML	81
	10.0-11.5	SP	8	24	32	20	12	0.37	A-6(9)	CL	85
	15.0-16.5	SP	6								
	20.0-21.5	SP	6	21	29	15	14	0.40	A-6(7)	CL	71
	25.0-26.5	SP	6								
	30.0-31.5	SP	8	21	20	17	3	1.43	A-4(0)	SM	47
	35.0-36.5	SP	2								
	40.0-41.5	SP	2	23	25	18	7	0.78	A-4(1)	CL-ML	50

Table 2
Summary of Unconfined Compression Test Data

Hole No.	Station	Offset (ft)	Depth (ft)	Unified Classification	Plasticity Index, PI	Unconfined Compressive Strength, Q_u (psf)	Undrained Shear Strength, S_u or c_u (psf)
1019	493+01.90	103.30 Lt.	4.5-6.5	CL	10	3892	1950
1020	493+69.80	CL	2.0-4.0	CL	15	2455	1225
			5.0-7.0	CL	18	2517	1250

A12.0 SOIL PARAMETERS AND FACTORS OF SAFETY

Design the walls using the soil strength parameters and external factors of safety in the tables below. The Designer shall verify wall stability based on final wall design dimensions. These requirements are based on the Department's judgment and interpretation of the geotechnical data and are provided to ensure that bidders' designs will be comparable relative to the integrity and performance of the walls. Any modifications proposed by the Contractor, if accepted by the Department, will be subject to price adjustment.

Table 4
Design Soil Strength Parameters

Parameter	Embankment	Soil 1	Soil 2	Soil 3
Elevation (ft)	Above 400	395-400	373-395	357-373
Soil Classification	CL	CL	CL	SM
Total Unit Weight (pcf)	120	120	120	120
Effective Angle of Internal Friction, ϕ' (deg)	28	28	28	27
Effective Cohesion, c' (psf)	200	200	200	200
Undrained Shear Strength, S_u or c_u (psf)	1200	1500	950	Use Effective Parameters for Short Term conditions

Table 5
Minimum Required Factors of Safety for External Failure Modes

Case No.	Design Case	Temporary/ Short Term	Permanent/ Long Term
1	Excavation Stability[1]	1.3	N/A
2	Global Stability[2]	1.3	1.5
3	External Stability[3]	1.3	1.6
4	Sliding	1.3	1.5
5	Rapid Drawdown[4]	N/A	1.0

[1]Excavation Stability analyses consider excavation lifts left unsupported for up to 24 hours before nails are installed.
[2]In Global Stability analyses, failure surfaces intersect some or all nails.
[3]In External Stability analyses, failure surfaces do not intersect the nails.
[4]Use Effective Stress Methods for Rapid Drawdown analyses.

A13.0 DESIGN CONSTRAINTS

Design the walls according to the design constraints provided below. Items 7 – 12 are specifically to limit wall deformation. These constraints are based on the Department's judgment and interpretation of the geotechnical data and are provided to ensure that bidders' designs will be comparable relative to the integrity and performance of the

walls. Any modifications proposed by the Contractor, if accepted by the Department, will be subject to price adjustment.

1. Neglect any resistance from the bridge in wall analysis and design.
2. Perform analyses with the groundwater table no lower than Elevation 399 feet for Short Term and Long Term Conditions. Perform analyses for a Rapid Drawdown conditions using a High Water Elevation of 404 feet.
3. Design for a traffic surcharge loading in accordance with AASHTO LRFD Bridge Design Specifications, current edition.
4. Perform Soil Nail Wall analyses using either GOLDNAIL or SNAIL; the use of other computer programs requires prior approval from the Department.
5. Perform analyses for the temporary condition assuming the excavation will be at least 1 ft. below the bottom of wall elevation or to the elevation that will be needed for construction, if lower.
6. The maximum allowable soil nail bond stress is 4 psi.
7. A minimum of six (6) rows of nails is required.
8. The maximum vertical and horizontal nail spacing is 4 feet.
9. The maximum distance from the top of the wall to the top row of nails is 3 feet unless prohibited by obstructions in the field; exceptions require prior approval from the Department.
10. The maximum nail inclination is 15^{O}.
11. The minimum nail length is 35 feet and the nail length of any row may not be shorter than the row below it.
12. In the top and second rows, the maximum allowable bar tensile stress is $0.4f_Y$ (i.e. $FS_T = 2.5$).

A14.0 MEASUREMENT AND PAYMENT

A14.1 The Department will measure and pay for the accepted quantity of "Soil Nail Wall" as described in the Contract Plans, Section 11 of this Special Note, and below, at the Contract Unit Bid Price per Square Foot. As shown in the Contract Plans, the soil nail wall quantities are based on a vertical projection of the wall surface rather than along the actual battered surface. The following are incidental to the Soil Nail Wall: any temporary and/or permanent facing (at the Contractor's option) below the defined bottom of wall provided in the contract plans; all components of the wall drainage system (except horizontal drains); the cost of all materials, labor, and equipment needed to texture the retaining wall.

A14.2 If drilling into solid rock is necessary to install soil nails, the cost of solid rock drilling is included in the unit price for "Soil Nail Wall" and there will be no additional compensation for rock drilling.

A14.3 The Department will measure and pay for the accepted quantity of "Foundation Preparation" according to Section 603 of the Standard Specifications at the Contract Lump Sum Bid Price. This includes the following:

- all excavation in front of the front face of the wall, common and solid rock;

- all common excavation required behind the front face of the wall;
- construction and removal of any working platform if necessary to construct the soil nail wall;
- any incidental grading required both in front and behind the wall; and
- all materials and labor described in Appendix B of this Special Note.

Code	Pay Item	Pay Unit
20603ED	Soil Nail Wall	Square Foot
8003	Foundation Preparation	Lump Sum

Special Note for Soil Nail Walls
Appendix B - Monitoring

Hopkins County
EB 9004, Soil Nail Retaining Wall
Item No. 2-8633.00

The work described in this Appendix is incidental to the Lump Sum bid price for "Foundation Preparation".

B1.0 DESCRIPTION

B1.1 This work consists of furnishing all instruments, tools, materials, and labor necessary to install and monitor survey monuments.

B1.2 During the course of construction, the Contractor will be responsible for monitoring survey points. Cooperate as necessary with the Department in facilitating these readings. Any monitoring data that indicates excessive structure deflections, the potential for unstable conditions, or damage to adjacent facilities, as determined by the Engineer, is cause for preventative measures to be taken in the affected area until the causes are identified and resolved to the satisfaction of the Engineer. At completion of the soil nail walls, the Department will take post construction readings.

B2.0 MATERIALS

Provide the materials described below.

B2.1 Survey Points Provide permanent survey points necessary to monitor bridge end bent movements.

B3.0 SURVEY POINTS

Install four survey points at approximately the left and right sides of each bridge end bent. Install the survey points to measure end bent movement during excavation and construction of the soil nail wall.

B4.0 MONITORING

B4.1 Monitor the survey points at weekly during excavation and until the permanent facing has been completed.

B4.2 Perform all necessary surveying using qualified technicians with a minimum of one (1) year of field surveying experience and working under the general

supervision of a licensed Professional Engineer or Professional Land Surveyor. Read the survey point movements to the nearest 0.01 ft.

B5.3 Provide monitoring data electronically to the Department within one day.

B6.0 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

The labor and materials described in this Appendix are incidental to the Lump Sum Bid Price for "Foundation Preparation".

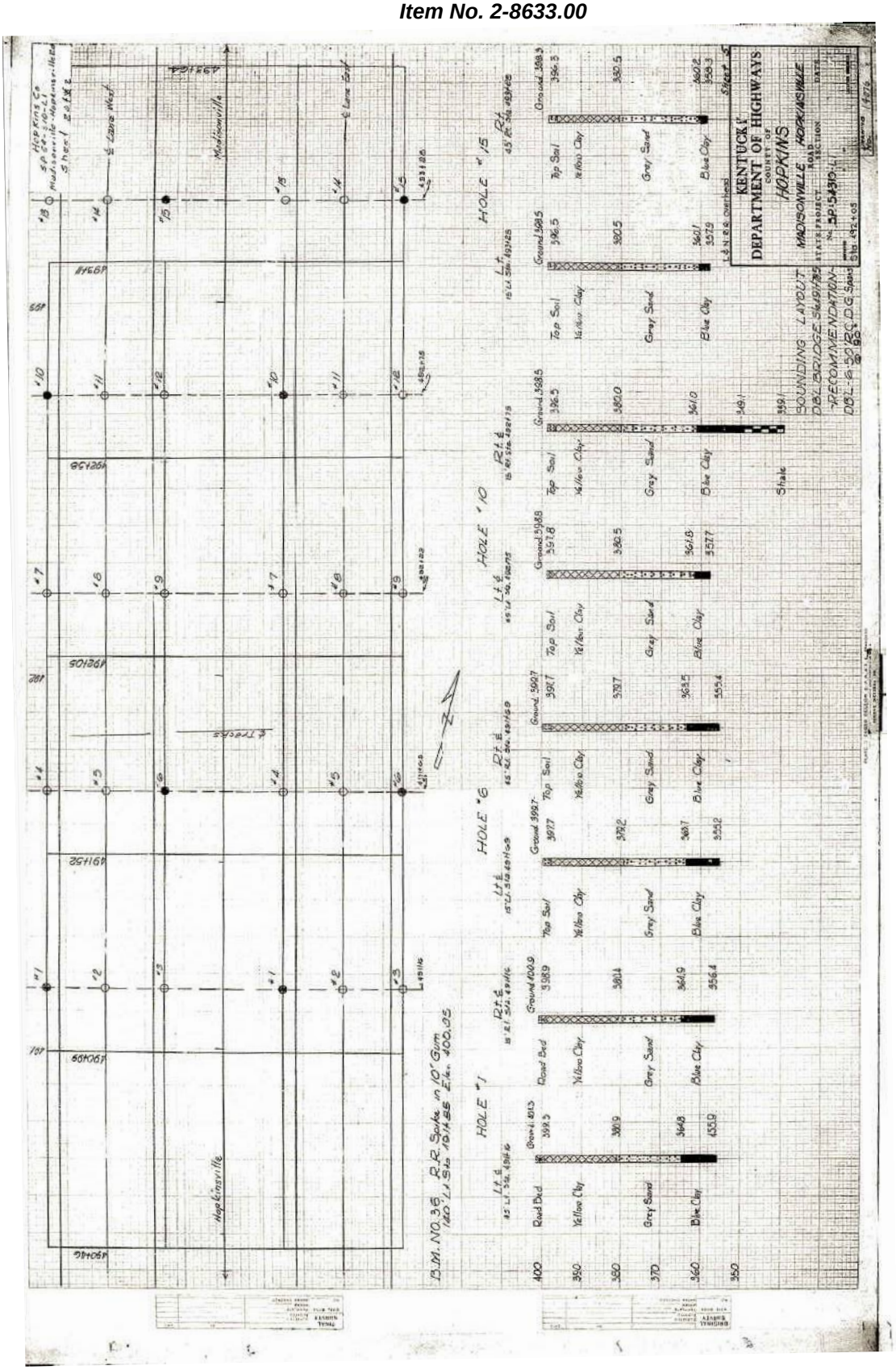
Special Note for Soil Nail Walls

Appendix C - Data from Previous Subsurface Explorations

Hopkins County

EB 9004, Soil Nail Retaining Wall

Item No. 2-8633.00



This drawing contains data from 1965.
NOT TO SCALE

Special Note for Soil Nail Wall Quality Control Inspection

Hopkins County
EB 9004, Soil Nail Retaining Wall
Item No. 2-8633.00

This Special Note is in addition to the requirements set forth in Section 113 of the Standard Specifications for Road and Bridge Construction, current edition.

The Federal Highway Administration's **Geotechnical Engineering Circular No. 7, Soil Nail Walls** (FHWA-IF-03-017) presents state-of-the-practice information on soil nails for highway applications. Ensure that Quality Control field and office personnel have access to and are familiar with this document.

1.0 DESCRIPTION

This work consists of developing, furnishing, executing, and maintaining a Quality Control Plan (QCP) for the inspection of the retaining wall(s). QC personnel will answer directly to the Department's Resident Engineer. The work includes but is not limited to inspecting, testing, and ensuring conformance to the contract. The Contractor is responsible for executing the QCP, which includes checking and tracking material shipments, construction inspection, and on-site materials testing pertaining to drilling, installation and testing of soil nails and instrumentation. This includes ensuring conformance with all sections and Appendices of the Special Note for Soil Nail Walls.

The Department will be responsible for quality assurance, any off-site material testing, and inspection of all other items in the contract.

2.0 QUALITY CONTROL PLAN (QCP) PERSONNEL

In addition to conforming to Subsection 113.03 of the Standard Specifications for Road and Bridge Construction, conform to the following requirements.

The QCP personnel's sole duty on the project will be implementing the QCP. Provide a QCP organization to be on the site at all times during the progress of work on the specified bid items, with complete authority to take any action necessary to ensure compliance with the Contract. These individuals must not be responsible for the production of the project and may not be employed by the general contractor, specialty subcontractor, or any other subcontractor responsible for any construction activities on the project.

Soil Nail testing is considered production work performed by the Specialty Contractor's production personnel (verification and proof testing). However, the QCP personnel will be responsible for monitoring the tests, independently recording data, and reviewing the Contractor's test reports.

The size and composition of the QCP organization may vary as the job progresses but at all times must be compatible with the level of effort and capability required by the Contract requirements.

Any engineering firm that performed engineering analyses and/or design for this project will not be permitted to perform QC Inspection, due to the potential for conflict of interest.

2.1 QCP Personnel

As part of the QCP organization, provide a QCP Manager and specialized inspection personnel to assist and be responsible to the QCP Manager and to be physically present at the construction site during all activities covered by the QCP. Provide a QCP organization with a minimum of six (6) persons, as follows:

- 1 QCP Manager and 1 Alternate QCP Manager
- 1 Lead Inspector and 1 Alternate Lead Inspector
- Assistant Inspectors (if necessary)

The actual number of personnel required may be less than four (4) and will be dictated by the project size, complexity, and schedule, and is subject to Department approval. However, the four persons above must be available.

Provide personnel with the experience and credentials below. For lead and assistant inspectors, education may be substituted for experience as follows:

- A Bachelors Degree in Engineering, Engineering Technology, Surveying, Construction Management, Geology, or other related technical field (at the discretion of the Department), will count for two (2) years of experience.
- An Associates Degree in Engineering Technology, Surveying, Construction Management or other related technical field (at the discretion of the Department), will count for one (1) year of experience.

2.1.1 QCP Manager and Alternate QCP Manager(s)

- Licensed Professional Engineer with a minimum of five (5) years of engineering experience in one or more of the following areas: construction, materials, geotechnical, or structure design. A Master's Degree in Engineering will count for one (1) year of experience.
- Experience on a minimum of three (3) projects involving the interpretation of pullout test results for drilled and grouted anchors such as soil and/or rock anchors, soil nails, rock bolts, etc.; or experience on a minimum of one (1) project involving the interpretation of pullout test results for drilled and grouted anchors such as soil and/or rock anchors, soil nails, rock bolts, etc.

supplemented by design-related experience on a minimum of one (1) soil nail or tieback ground anchor retaining wall project and other experience with interpretation of geotechnical-related field test results (e.g. deep foundation load testing, geotechnical instrumentation, etc.)

- Field construction engineering and/or inspection experience on a minimum of three (3) geotechnical-related projects.

2.1.2 Lead Inspector and Alternate Lead Inspector(s)

- A minimum of six (6) years of construction and/or materials inspection experience showing evidence of supervisory experience on geotechnical-related projects.
- Construction inspection experience on a minimum of two (2) projects involving inspection of installation and pullout testing of drilled and grouted anchors such as soil and/or rock anchors, soil nails, rock bolts, etc.; or experience on a minimum of one (1) project involving inspection of installation and pullout testing of drilled and grouted anchors such as soil and/or rock anchors, soil nails, rock bolts, etc., supplemented by related experience such as post-tensioned concrete inspection, deep foundation load testing, etc.
- ACI Level I Concrete Field Testing Technician, supplemented by a minimum of one (1) other construction-related technician certification (NICET, KYTC, etc.).

2.1.3 Assistant Inspectors

- A minimum of four (4) years of construction and/or materials inspection experience on geotechnical-related projects.
- Construction inspection experience on a minimum of one (1) project involving inspection of installation and pullout testing of drilled and grouted anchors such as soil and/or rock anchors, soil nails, rock bolts, etc. or one (1) project involving drilled deep foundations (drilled shafts, auger cast piles, drilled-in soldier piles, etc.) or other drilling-related experience (geotechnical exploration drilling, etc.).

2.2 QCP Personnel Duties Duties for the QCP personnel include, but are not limited to the duties described below.

2.2.1 QCP Manager and Alternate QCP Manager(s)

The QCP Manager must be available during construction activities as indicated on the QCP Plan. The QCP Manager may be removed from the project for noncompliance of quality products. Identify an Alternate QCP Manager in the QCP Plan to manage the QCP effort during the QCP Manager's absence. In no instance may the QCP Manager be absent and the Alternate QCP Manager serve for more than a 2 week period without written permission from the Engineer.

The QCP Manager must visit the project site at least one time during the first two (2) weeks of activities covered by the QCP. The QCP Manager and/or Alternate QCP Manager must review all QCP reports and documentation and submit letters to the Resident Engineer documenting that they have done such.

2.2.2 Lead Inspector

The Lead Inspector or Alternate Lead Inspector must be present during all activities covered by the QCP. The Lead Inspector or Alternate Lead Inspector may request prior verbal approval for short absences from the Resident Engineer or authorized representative. Approval will be subject to the experience and competency of the Assistant Inspector(s) on the project.

The Lead Inspector or Alternate Lead Inspector must review and sign all QCP reports and documentation prior to submittal to the Department.

3.0 QCP Organization and Procedures

The QCP must include the following:

3.1 A description of the quality control organization, including an organizational chart showing lines of authority and acknowledgment that the QCP staff shall implement at least a 3-phase control system for all aspects of work as specified herein. Phase I Preparatory Phase prior to beginning work; Phase II Construction Phase during execution of work; and Phase III Acceptance of Work.

3.2 The name, qualifications in resume format, duties responsibilities and authorities and certifications of the QCP Manager, Alternate QCP Manager, Lead Inspector and Alternate Lead Inspector and all other personnel.

3.3 A copy of the letter to the QCP Manager, signed by an authorized official of the Contractor which describes the responsibilities and delegates sufficient authority to adequately perform the functions of the QCP Manager, including authority to stop work which is not in compliance with the Contract. The QCP Manager must issue a letter of direction to all other various quality control representatives outlining duties, authorities and responsibilities. Include copies of these letters in the QCP.

3.4 Procedures for managing submittals and approvals, including but not limited to, source of materials, shop drawings and subletting requests.

3.5 Procedures for tracking construction deficiencies from identification through acceptable corrective action shall be on the QCP. These procedures will establish verifications that identified deficiencies have been corrected. A Non-Conformance Report (NCR) with each item numbered consecutively will be prepared and signed by the QCP Manager at least weekly with recommended action, action taken and date corrected and filed separately.

3.6 The scope of the project, including a list of definable work activities. A definable work activity is separate and distinct from other tasks, requires specific crews or Subcontractors, has different specifications, and has separate control requirements. It could be identified by different crews or Subcontractors, or it could be work performed by the same trade in a different environment. Each activity must have construction tolerances and workmanship standards identified for use by construction crews and sampling/testing frequencies identified for the QCP personnel. This list will be agreed upon during the coordination meeting.

4.0 CONTROL

QCP is the means by which the Contractor ensures the quality and construction, to include subcontractors and suppliers, and complies with the requirements of the Contract. At least 3 phases of control must be conducted by the QCP Manager for each definable work activity as follows:

4.1 Preparatory Phase Perform this phase prior to beginning work in an activity and include:

4.1.1 Review all the Contractor's Construction and Materials Submittals (including those required by the Special Note for Soil Nail Walls, steel mill test reports, nail QC reports, shop drawings, etc.) and provide written comments signed by the QCP Manager and Lead Inspector, to the Department within 14 calendar days; include specific recommendations for acceptance, acceptance with revisions, or non-acceptance of each submittal.

4.1.2 Prior to the start of each work activity, the Contractor and QCP Manager are encouraged to conduct a meeting with each crew to discuss in detail with each crew member the quality standards and workmanship identified in the Preparatory Phase. The importance and role of each crew member in achieving quality should be stressed.

4.1.2 A review of each paragraph of applicable specifications.

4.1.3 A review of Contract and Construction Drawings.

4.1.4 A check to assure that all materials and equipment and subletting requests have been submitted, tested and approved.

4.1.5 A review of control inspection and testing requirement has been completed.

4.1.6 Examination of the work area to assure that all required preliminary work has been completed and complies with the Contract.

4.1.7 A physical examination to assure all required materials and equipment are on hand, and conform to approved shop drawings, or submitted data and are properly stored.

4.1.8 Notify the Department at least 24 hours prior to beginning aggregate or concrete work.

4.1.9 Preparation and approval of QCP staffing plan which corresponds to the working schedule.

4.1.10 Discussion of procedures for controlling quality of work, including repetitive deficiencies, with all contractor managers. Assure availability of appropriate documentation.

4.2 Construction Phase This phase includes the control measures from start to completion of a work activity.

4.2.1 Once the work zone has been established, check it to ensure conformance with the Contract requirements.

4.2.2 Monitor the producers' QC testing to ensure specifications are being met.

4.2.3 Inspect, test and document in accordance with the Contract requirements to ensure quality standards are being identified, corrective actions taken and documented using the NCR. The Lead Inspector will be responsible for completing a Daily Work Report (DWR) to document each day's activities on the retaining wall work. Submit the DWR to the Resident Engineer or representative no later than the close of the next workday. Verify quality standards as work progresses and make adjustments to the QCP.

4.3 Acceptance Phase

4.3.1 Pre-final Inspection At the completion of any work activity or any increment thereof, the QCP Manger, Contractor, and Resident Engineer (or representative) must conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications. Include such a list of deficiencies in the QCP documentation as required herein and include the estimated date by which the deficiencies will be corrected. The Contractor must ensure all items on this list have been corrected when the Final Inspection is scheduled.

4.3.2 Final Acceptance Inspection Final acceptance and any corrective work will be in accordance with the requirements of Section 105.12 of the Standard Specifications.

5.0 QCP SUBMITTAL

5.1 Original Submittal for Approval Submit the QCP to the Engineer no later than sixty (60) calendar days after receiving Notice to Begin Work and at least thirty (30) calendar days before beginning a specific work activity. The Department will return the QCP to the Contractor within twenty-one (21) calendar days after submittal with requests for changes, if applicable. The Contractor will then have seven (7) calendar days to correct and make changes and resubmit the QCP to the Engineer. Work cannot begin on an activity until after the QCP for that activity has been approved by the Engineer.

5.2 Subsequent Approvals Once the Contractor begins work under the approved QCP, continuously prosecute the work in accordance with the QCP. Changes must be approved by the Engineer prior to implementation.

6.0 DOCUMENTATION

The Contractor and QCP personnel are advised that any deliberate action to the detriment of the QCP will be grounds for defaulting the Contract. This includes but is not limited to any deliberate omissions, deliberate cover-ups, or attempts by the Contractor to withhold information from the Department. Allow direct communication between QCP personnel and the Department. The Contractor and any Subcontractor involved in such detrimental action will not be considered for future bids until requalified.

Maintain current records providing factual evidence that required quality control activities and tests have been performed. Include the work of subcontractors and suppliers. Document verification and proof tests in accordance with the Special Note for Soil Nail Walls. Generate and update a soil nail test summary. Forms for these records must be approved by the Department. Submit all records with the last pay estimate, including but not limited to sketch books, and as-built plans. The Department will make the final payment only after all documentation has been submitted.

7.0 PAYMENT

The Department will pay for Quality Control at the contract Lump Sum amount. The Department considers payment as full compensation for all labor and costs associated with performing Quality Control. In addition to conforming to Subsection 113.09 of the Standard Specifications for Road and Bridge Construction, there are the following requirements. The Department will include payment for 20 percent Lump Sum for the QCP in the first estimate. The Department will pay the remaining 80 percent based on the percentage of work completed.

Additional payment for the QCP will be made when time or extra work is added according to Subsection 104.03 for the bid items included in the QCP. Additional work added to other parts of the contract will not permit additional payment for the QCP.

Code	**Pay Item**	**Pay Unit**
2572	Quality Control	Lump Sum

Special Note

Use the following seed mixture for Seeding and Protection Bid Item #5985:

Seed Mix Type IV:
30% Turf Type Tall Fescue Blend (Festuca arundinacea) (Triple Crown or equivalent)
20% Creeping Red Fescue (Festuca rubra)
35% Hard Fescue (Festuca longifolia)
10% Perennial Ryegrass (Lolium perenne)
5% Micro Clover (Trifolium repens)

1) Permanent Seeding on Slopes 3:1 or Less. Apply seed mix Type IV at a minimum application rate of 250 pounds per acre.

SPECIAL NOTE FOR
GUARDRAIL END TREATMENT TYPE 1

Contrary to KYTC Standard Drawing RBR-020-05 the guardrail end treatment ET-Plus manufactured by Trinity Industries will not be permitted as an option for bid item “Guardrail End Treatment Type 1”.

SPECIAL NOTE

HOPKINS COUNTY
NHPP 0411 (022)
FD52 054 9004 036-038
KY813 INTERCHANGE IMPROVEMENTS
Item 02-232.02

LIQUIDATED DAMAGES

Liquidated damages or disincentives in the amount of $2,000/day will be assessed for each day or part of a day a lane closure remains in place during periods specified by the following:

Single lane closures may occur along the Pennyrile Parkway for ramp/mainline tie in construction for a period not to exceed 30 calendar days, unless approved by the Engineer. There will be no lane closures allowed during the following holidays:

New Year's Day
Memorial Day (including weekend)
Independence Day (including weekend)
Labor Day (including weekend)
Thanksgiving (Thursday – Sunday)
Christmas (December 25th – 26th)

Contrary to KYTC Standard Specification Section 108.09, liquidated damages will be assessed regardless of whether seasonal limitations prohibit the Contractor from performing work on the controlling operation.

All liquidated damages will be applied accumulatively.

All other applicable portions of KYTC Standard Specification Section 108 apply.

SPECIAL NOTE FOR PAVEMENT WEDGE AND SHOULDER SEPARATE OPERATION

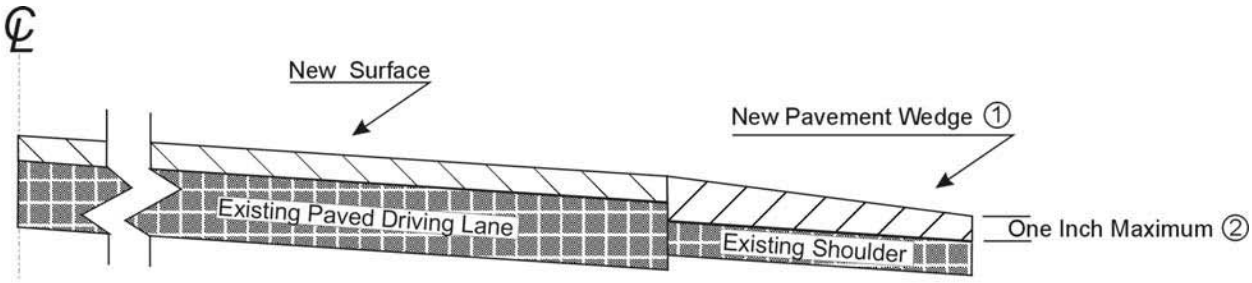
1.0 MATERIALS. Provide an Asphalt Mixture for Pavement Wedge conforming to Section 407 of the Standard Specifications or an Asphalt Surface Mixture conforming to Section 403 of the Standard Specifications, as applicable to the project, for the pavement wedge.

2.0 CONSTRUCTION. Place the Asphalt Mixture for Pavement Wedge or Asphalt Surface Mixture as a separate operation from the driving lane. Prime the existing shoulder with tack material as the Engineer directs before placing the wedge. Construct according to Sections 407.03 and 403.03 as applicable.

When the Engineer deems it appropriate to pave both the driving lane and the adjoining wedge monolithically, equip the paver with a modified screed that extends the full width of the wedge being placed and is tapered to produce a wedge. Obtain the Engineer's approval of the modified screed before placing shoulder wedge monolithically with the driving lane.

The wedge may vary in thickness at the edge of the driving lanes. Where existing site conditions permit, limit the outside edge thickness of the new paving limits to one inch above the existing shoulder wedge elevation. If an Asphalt Surface Mixture is furnished for the pavement wedge, texture according to Section 403.03.08.

The following sketch is primarily for the computation of quantities; however, the wedge will result in a similar cross-section where sufficient width exists. Do not construct a shoulder for placing the wedge unless specified elsewhere in the Contract.



① Slope varies, but is down from the driving lanes except on outside of some curves where superelevation controls.

② Where existing site conditions permit.

3.0 MEASUREMENT. The Department will measure Asphalt Mixture for Pavement Wedge or Asphalt Surface Mixture placed as the pavement wedge according to Sections 403 and 407 as applicable.

4.0 PAYMENT. The Department will make payment for the completed and accepted quantities of Asphalt Surface Mixtures placed as pavement wedge according to Section 403. The Department will make payment for the completed and accepted quantities of Asphalt Mixture for Pavement Wedge according to Section 407.

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

County: Hopkins Item No.: 2-232.02

Federal Project No.: NH 9004 (021)

Project Description:

To improve the existing KY813 interchange (Mortons Gap Ex 37) at the Edward T. Breathitt Parkway to meet current Interstate dedign standards. The interchange is located within a section of the Parkway the KYTC intends to upgrade and reclassify as I-69. No improvements, other than signing, are anticipated to the Parkway.

Roadway Classification: ☐ Urban ☒ Rural

☐ Local ☒ Collector ☐ Arterial ☐ Interstate

ADT (current) 2800 AM Peak Current _____ PM Peak Current _____ % Trucks _____

Project Designation: ☐ Significant ☐ Other: _____

Traffic Control Plan Design:

Taper and Diversion Design Speeds 55

Minimum Lane Width 12' Minimum Shoulder Width 8'

Minimum Bridge Width N/A

Minimum Radius 965' Maximum Grade 6%

Minimum Taper Length _____ Minimum Intersection Level of Service _____

Existing Traffic Queue Lengths N/A Projected Traffic Queue Lengths N/A

Comments:

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

Item No. 2-232.02

Discussion:

1) Public Information Plan	
a) Prepare with assistance from ☒ KYTC or ☐ _____	
b) Identify Trip Generators N/A	f) Railroad Involvement N/A
c) Identify Types of Road Users Referenced	g) Address Pedestrians, Bikes Mass Transit N/A
d) Public Information Message Referenced	h) Address Timing, Frequency, Updates, Effectiveness of Plan Referenced
e) Public Information Strategies to be used Referenced	i) Police & Other Emergency Services N/A

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

Item No. 2-232.02

2) Temporary Traffic Control Plan (For Each Phase of Construction) Phase I

Exposure Control Measures		**Positive Protection Measures**	
a) Is Road Closure Allowed Type:	Referenced	a) Address Drop Off Protection Criteria	Referenced
b) Detour Conditions	N/A	b) Temporary Barrier Requirements	Referenced
c) Working Hour Restrictions	Referenced	c) Evaluation of Existing Guardrail Conditions	Referenced
d) Holiday or Special Event Work Restrictions	Referenced	d) Address Temporary Drainage	Referenced
e) Evaluation of Intersection LOS	N/A	**Uniformed Law Enforcement Officers**	N/A
f) Evaluation of Queue Lengths	N/A	**Payment for Traffic Control***	
g) Evaluation of User Costs and Incentives/Disincentives	N/A	a) Method of Project Bidding	N/A
h) Address Pedestrians, Bikes, Mass Transit	N/A	b) Special Notes	Referenced
Work Vehicles and Equipment	N/A	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction	

Comments:

Referenced items are found in the MOT plans or the Kentucky 2012 - Standard Specification For Road and Bridge Construction. The construction engineer retains the right to change traffic control measures if needed during construction. KYTC Public Information Officer will provide local media with project information prior to project and when a change is phased construction may effect motorists.

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

Item No. 2-232.02

2) Temporary Traffic Control Plan (For Each Phase of Construction)
Phase 2

Exposure Control Measures		**Positive Protection Measures**	
a) Is Road Closure Allowed Type:	Referenced	a) Address Drop Off Protection Criteria	Referenced
b) Detour Conditions	N/A	b) Temporary Barrier Requirements	Referenced
c) Working Hour Restrictions	Referenced	c) Evaluation of Existing Guardrail Conditions	Referenced
d) Holiday or Special Event Work Restrictions	Referenced	d) Address Temporary Drainage	Referenced
e) Evaluation of Intersection LOS	Referenced	**Uniformed Law Enforcement Officers**	N/A
f) Evaluation of Queue Lengths	N/A	**Payment for Traffic Control***	
g) Evaluation of User Costs and Incentives/Disincentives	N/A	a) Method of Project Bidding	N/A
h) Address Pedestrians, Bikes, Mass Transit	N/A	b) Special Notes	Referenced
Work Vehicles and Equipment	N/A	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction	

Comments:

Referenced items are found in the MOT plans or the Kentucky 2012 - Standard Specification For Road and Bridge Construction. The construction engineer retains the right to change traffic control measures if needed during construction.

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

Item No. 2-232.02

2) Temporary Traffic Control Plan (For Each Phase of Construction) Phase 3			
Exposure Control Measures		**Positive Protection Measures**	
a) Is Road Closure Allowed Type:	N/A	a) Address Drop Off Protection Criteria	Referenced
b) Detour Conditions	Referenced	b) Temporary Barrier Requirements	Referenced
c) Working Hour Restrictions	Referenced	c) Evaluation of Existing Guardrail Conditions	Referenced
d) Holiday or Special Event Work Restrictions	N/A	d) Address Temporary Drainage	Referenced
e) Evaluation of Intersection LOS	N/A	**Uniformed Law Enforcement Officers**	N/A
f) Evaluation of Queue Lengths	N/A	**Payment for Traffic Control***	
g) Evaluation of User Costs and Incentives/Disincentives	N/A	a) Method of Project Bidding	N/A
h) Address Pedestrians, Bikes, Mass Transit	N/A	b) Special Notes	Referenced
Work Vehicles and Equipment	N/A	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction	

Comments:

Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

Item No. 2-232.02

APPROVAL:

J.L. Rudd — 3/13/15
Project Manager — Date

Brad Hourk — 3/30/2015
Project Delivery and Preservation Manager — Date

Kenneth K. Pelfrey — 3/5/15
Engineering Support Manager — Date

FHWA Representative — Date

Revisions to the TMP require review/approval by the signatories.

COUNTY OF	ITEM NO.	SHEET NO.
HOPKINS	2-232.02	R63

TRAFFIC MANAGEMENT PLAN
(SIGNIFICANT PROJECT)

OVERVIEW

THE PROJECT PROVIDES FOR THE RECONSTRUCTION OF THE KY813 / PENNYRILE PARKWAY INTERCHANGE. THE INTERCHANGE WILL BE CONVERTED TO A TRADITIONAL "DIAMOND" DESIGN WITH FOUR NEW ACCESS RAMPS CONSTRUCTED. ADDITIONALLY, WITHIN THE INTERCHANGE LIMITS, KY813 WILL BE RAISED TO ELEVATE THE ROADWAY OUT OF THE EXISTING 100-YEAR FLOODPLAIN AND A CENTER TURN LANE WILL BE ADDED. THE TWO EXISTING PARKWAY BRIDGES CROSSING KY813 ARE NOT IMPACTED, EXCEPT:

1. PIER PROTECTION IS TO BE CONSTRUCTED BETWEEN THE PIER COLUMNS ADJACENT TO KY813.
2. A RETAINING WALL IS TO BE CONSTRUCTED UNDER THE NORTH END OF THE TWO STRUCTURES.

ADDITIONAL CONSTRUCTION INCLUDES UTILITY RELOCATIONS, CULVERT EXTENSION, OVERHEAD LIGHTING, AND SIGNAGE.

THE MOT PLAN ALLOWS FOR ACCESS TO BE MAINTAINED AT ALL TIMES ON THE EXISTING PARKWAY RAMPS, KY813, AND COMMERCIAL ENTRANCES ALONG KY813. THE PLAN IS BASED ON THREE PHASES. CONSTRUCTION OF THE RAMPS NORTH OF KY813 AND THE RAISING OF KY813 OCCURS IN PHASE 1. THE RAMPS SOUTH OF KY813 ARE CONSTRUCTED IN PHASE 2. THE FINAL SURFACING WILL OCCUR IN PHASE 3.

GENERAL NOTES

CHANGES TO THE MOT PLAN AS SHOWN WILL BE CONSIDERED. HOWEVER, ANY CHANGES WILL NEED APPROVAL BY THE ENGINEER PRIOR TO THE START OF CONSTRUCTION. THE "MAINTAIN AND CONTROL" BID ITEM WILL PROVIDE FOR ALL MISCELLANEOUS TRAFFIC CONTROL ITEMS REQUIRED. THE "TEMPORARY SIGNS" BID ITEM WILL PROVIDE FOR ALL MUTCD REQUIRED ADVANCED WARNING SIGNS. ADDITIONAL BID ITEMS ARE AS IDENTIFIED ON THE GENERAL SUMMARY SHEET . OVERALL COMPLIANCE WILL CONFORM TO SECTION 112 OF THE MOST CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. PAYMENT FOR ARROW BOARDS AND BARRICADE TYPE III WILL BE THE MAXIMUM NUMBER IN PLACE AT ANY ONE TIME.

PHASE 1A

1. CONSTRUCT THE NEW BRIDGES ON RAMPS B AND C. CONSTRUCT THE RETAINING WALL, CULVERT EXTENSION, AND THE UTILITY RELOCATIONS ALONG AND UNDER KY 813, EXCEPT FOR SECTIONS UNDERNEATH THE EXISTING RAMPS.
2. CONSTRUCT RAMPS B AND C. LONG-TERM LANE CLOSURES ALONG THE PARKWAY WILL BE REQUIRED TO CONSTRUCT THE RAMP CONNECTIONS. SEPARATE CLOSURES IN THE NORTHBOUND AND SOUTHBOUND LANES ARE REQUIRED. PAYMENT WILL BE PER THE "LANE CLOSURE" BID ITEM (2 EACH).
3. CONSTRUCT THE NEW BRIDGE AT COUNTY ROAD 1152 (CR-1152, TRUCK STOP ENTRANCE). ACCESS TO CR-1152 AND THE TRUCK STOP IS MAINTAINED ALONG THE EXISTING BRIDGE AND ENTRANCE UNTIL THE NEW BRIDGE AND ROAD WORK ARE BOTH OPERATIONAL.
4. KY813 IS RAISED AND WIDENED.
   A. THE ROAD IS TO BE RAISED A MAXIMUM OF 7.2 FEET WHICH CREATES ISSUES KEEPING THE FOUR EXISTING RAMPS OPERATIONAL. THE MOT PLAN IS PREDICATED ON THE SEQUENTIAL RAISING OF THE ROAD WITH ASPHALT WEDGING.
   B. THE EXISTING PAVEMENT WILL BE SALVAGED. ASPHALT WEDGING (MAXIMUM 6-INCH LIFTS) WILL BE USED TO RAISE THE EXISTING PAVEMENT. THE ROAD WIDENING WILL OCCUR CONCURRENTLY WITH COMMON EMBANKMENT. THE PAVEMENT RAISING WILL OCCUR IN SEQUENTIAL LIFTS. THE WEDGING WILL BE CONSTRUCTED USING A CONVENTIONAL PAVING OPERATION WHERE TRAFFIC ALONG KY813 IS MAINTAINED USING A FLAGGING OPERATION. IT IS ASSUMED THAT A LIFT (2 PULLS, ONE PER EXISTING LANE) CAN BE CONSTRUCTED DURING ONE WORKING DAY. THIS WILL ALLOW THE ROAD TO BE REOPENED TO TRAFFIC AT THE END OF EACH DAY. THE PAVEMENT DROP-OFF THAT IS CREATED CAN BE ELIMINATED WITH COMMON EMBANKMENT. ADDITIONAL PAVEMENT WEDGING WILL NEED TO OCCUR AT EACH OF THE RAMPS AND ANY OPERATIONAL COMMERCIAL ENTRANCE. A 5% MAXIMUM SLOPE WILL BE ALLOWED FOR THIS ADDITIONAL PAVEMENT WEDGING. PAYMENT FOR THE ASPHALT WEDGING WILL BE PER TON PER THE ASPHALT WEDGING BID ITEM. REFERENCE IS MADE TO THE "<u>ASPHALT MIXTURE FOR PAVEMENT WEDGE</u>" SPECIAL NOTE FOR THE PAVEMENT MIXES AND PROCEDURES THAT WILL BE ALLOWED. PAYMENT FOR THE FLAGGING OPERATIONS WILL BE INCIDENTAL TO THE "MAINTAIN AND CONTROL TRAFFIC" BID ITEM.
   C. THE UPPER LEVEL OF THE RAISED KY813 WILL BE BASED ON A CONVENTIONAL PAVEMENT SECTION. REFERENCE IS MADE TO THE TYPICAL SECTION FOR THE THICKNESS AND PAY LIMITS. PAVEMENT FOR THESE ITEMS IS PER THE RESPECTIVE BID ITEM.

PHASE 1B

5. CONSTRUCT THE NEW SECTION OF FREE HENRY FORD ROAD AND A PORTION OF THE TRUCK STOP CONNECTOR.
6. BASED ON GRADE DIFFERENCES, CONSTRUCTION OF A TEMPORARY DIVERSION ROAD IS REQUIRED FOR FREE HENRY FORD ROAD TO REMAIN OPERATIONAL.

PHASE 1C

7. ACCESS TO CR-1152 (TRUCK STOP ENTRANCE) WILL BE MAINTAINED AT THE CURRENT LOCATION UNTIL THE TEMPORARY WEDGING ON KY813 REACHES ELEVATION 404.00'. AT THAT POINT ACCESS WILL BE SHIFTED TO THE NEW CR-1152 ENTRANCE AND BRIDGE LOCATION. PAVEMENT WEDGING UP TO THE NEW BRIDGE WILL BE REQUIRED PRIOR TO THE TRAFFIC SHIFT.
   A. <u>THE NEW CR-1152 BRIDGE MUST BE COMPLETE, AND THE NEW ENTRANCE OPENED, BEFORE THE RAISING OF KY813 CAN PROCEED ABOVE THE ELEVATION NOTED ABOVE.</u>
8. THE REMAINING SECTION OF THE NEW TRUCK STOP CONNECTOR (TIE THE NEW ENTRANCE SECTION TO THE EXISTING PAVEMENT) OCCURS CONCURRENTLY WITH THE SHIFTING OF TRAFFIC TO THE NEW BRIDGE AND ENTRANCE. THIS WILL BE AN ASPHALT PAVING OVERLAY OPERATION UNDER THE DURESS OF TRAFFIC.

PHASE 2A

9. OPEN RAMPS B AND C TO TRAFFIC. ALL NEW SIGNING ON THE PARKWAY AND KY813 WILL NEED TO BE IN PLACE. COMPLETE UTILITY RELOCATION CONSTRUCTION.
10. PARTIALLY CONSTRUCT RAMPS A AND D TO THE LIMITS SHOWN. LONG-TERM LANE CLOSURES ALONG THE PARKWAY WILL BE REQUIRED TO CONSTRUCT THE RAMP CONNECTIONS. SEPARATE CLOSURES IN THE NORTHBOUND AND SOUTHBOUND LANES ARE REQUIRED. PAYMENT WILL BE PER THE "LANE CLOSURE" BID ITEM (2 EACH).

PHASE 2B

11. OPEN RAMPS A AND D TO TRAFFIC. THE CONNECTION TO THE PARKWAY WILL BE A TEMPORARY CONNECTION UNTIL THE REMAINING SECTION OF THE RESPECTIVE RAMPS CAN BE CONSTRUCTED. SEE BELOW.
12. CONSTRUCT THE REMAINING SECTIONS OF RAMPS A AND D. LONG-TERM LANE CLOSURES ALONG THE PARKWAY WILL BE REQUIRED TO CONSTRUCT THE RAMP CONNECTIONS. SEPARATE CLOSURES IN THE NORTHBOUND AND SOUTHBOUND LANES ARE REQUIRED. PAYMENT WILL BE PER THE LANE CLOSURE BID ITEM (2 EACH). THE LANE CLOSURES IN PHASE 2B ARE SEPARATE FROM THE CLOSURES IN PHASE 2A. FOUR CLOSURES ARE REQUIRED FOR PHASE 2.

PHASE 3

13. FINAL ASPHALT SURFACING AND STRIPING OF KY813 AND THE NEW RAMPS OCCURS. MILLING AND RESURFACING OF THE PARKWAY, SOUTH OF THE EXISTING BRIDGES OVER KY813, OCCURS TO THE LIMITS SHOWN. MILLING AND RESUFACING OF THE PARKWAY NORTH OF THE BRIDGES WILL BE ADDRESSED BY CONTRACT FD04_SPP_054_9004_037_043.

PAVEMENT EDGE DROP-OFFS

DIFFERENCE IN ELEVATION FOR TRAVEL LANES:

A PAVEMENT EDGE THAT TRAFFIC IS EXPECTED TO CROSS IN A LANE CHANGE SITUATION SHALL NOT HAVE AN ELEVATION DIFFERENCE GREATER THAN 1 1/2 INCH. THEY MAY BE INCREASED TO 2 INCHES FOR LOW SPEED SITUATIONS. WARNING SIGNS SHALL BE PLACED IN ADVANCE AND THROUGHOUT THE DROP-OFF AREA WHEN DROP-OFFS ARE GREATER THAN 1/2 INCH. MODIFICATIONS WILL BE AS DIRECTED BY THE ENGINEER.

DIFFERENCE IN ELEVATION FOR NON-TRAVEL LANES:

PAVEMENT EDGES THAT TRAFFIC IS NOT EXPECTED TO CROSS SHALL BE TREATED AS FOLLOWS - OR AS DIRECTED BY THE ENGINEER:

LESS THAN 1/2 INCH - NO PROTECTION REQUIRED.

1/2 TO 2 INCHES - WARNING SIGNS SHALL BE PLACED IN ADVANCE AND THROUGHOUT THE DROP-OFF AREA.

2 TO 4 INCHES - PLASTIC DRUMS, VERTICAL PANELS, OR BARRICADES SHALL BE PLACED EVERY 50 FEET FOR SPEEDS LESS THAN 50 MILES PER HOUR AND EVERY 100 FEET FOR SPEEDS OF 50 MILES PER HOUR AND GREATER. CONES MAY BE USED IN PLACE OF PLASTIC DRUMS, VERTICAL PANELS, AND BARRICADES DURING DAYLIGHT HOURS. SPACING PER TAPERS SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

4 INCHES AND GREATER - POSITIVE SEPARATION NEEDED OR WEDGE WITH 3:1 OR FLATTER SLOPE. IF THERE IS 8 FEET OR MORE DISTANCE BETWEEN THE EDGE OF PAVEMENT AND DROP-OFF, PLASTIC DRUMS, VERTICAL PANELS OR BARRICADES MAY BE USED. IF CONCRETE BARRIERS ARE USED SPECIAL REFLECTIVE DEVICES OR STEADY BURN LIGHTS SHALL BE USED FOR OVERNIGHT INSTALLATIONS.

FOR TEMPORARY CONDITIONS, DROP-OFFS 4 INCHES AND GREATER MAY BE PROTECTED WITH PLASTIC DRUMS, VERTICAL PANELS, OR BARRICADES FOR SHORT DISTANCES DURING DAYLIGHT HOURS WHILE WORK IS BEING DONE IN THE DROP-OFF AREA.

PAYMENT WILL BE ALLOWED FOR DGA MATERIAL USED FOR WEDGING.

PROJECT SPECIFIC NOTES

1. TWO "PORTABLE CHANGEABLE MESSAGE SIGNS" AND "ARROW BOARDS" HAVE BEEN PROVIDED IN THE CONTRACT TO BE USED AT THE DISCRETION OF THE ENGINEER. PAYMENT WILL ONLY BE MADE IF THE ITEMS ARE USED.
2. LONG TERM LANE CLOSURES ON THE PARKWAY MAY NOT EXCEED 30 CALENDAR DAYS AT EACH LOCATION UNLESS APPROVED BY THE ENGINEER. THERE WILL BE NO LANE CLOSURES ALLOWED DURING THE FOLLOWING HOLIDAYS:
   - NEW YEAR'S DAY
   - MEMORIAL DAY (INCLUDING WEEKEND)
   - INDEPENDENCE DAY
   - LABOR DAY (INCLUDING WEEKEND)
   - THANKSGIVING (THURSDAY - SUNDAY)
   - CHRISTMAS (DECEMBER 25TH - 26TH)
3. SINGLE LANE CLOSURES MAY OCCUR ALONG THE PARKWAY FOR RAMP/MAINLINE TIE IN CONSTRUCTION. LIQUIDATED DAMAGES WILL BE ENFORCED IF ROAD IS NOT REOPENED TO TRAFFIC BY SPECIFIED TIME. SEE "<u>LIQUATED DAMAGES</u>" SPECIAL NOTE.

KY 813 INTERCHANGE
MAINTENANCE OF TRAFFIC
OVERVIEW & GENERAL NOTES

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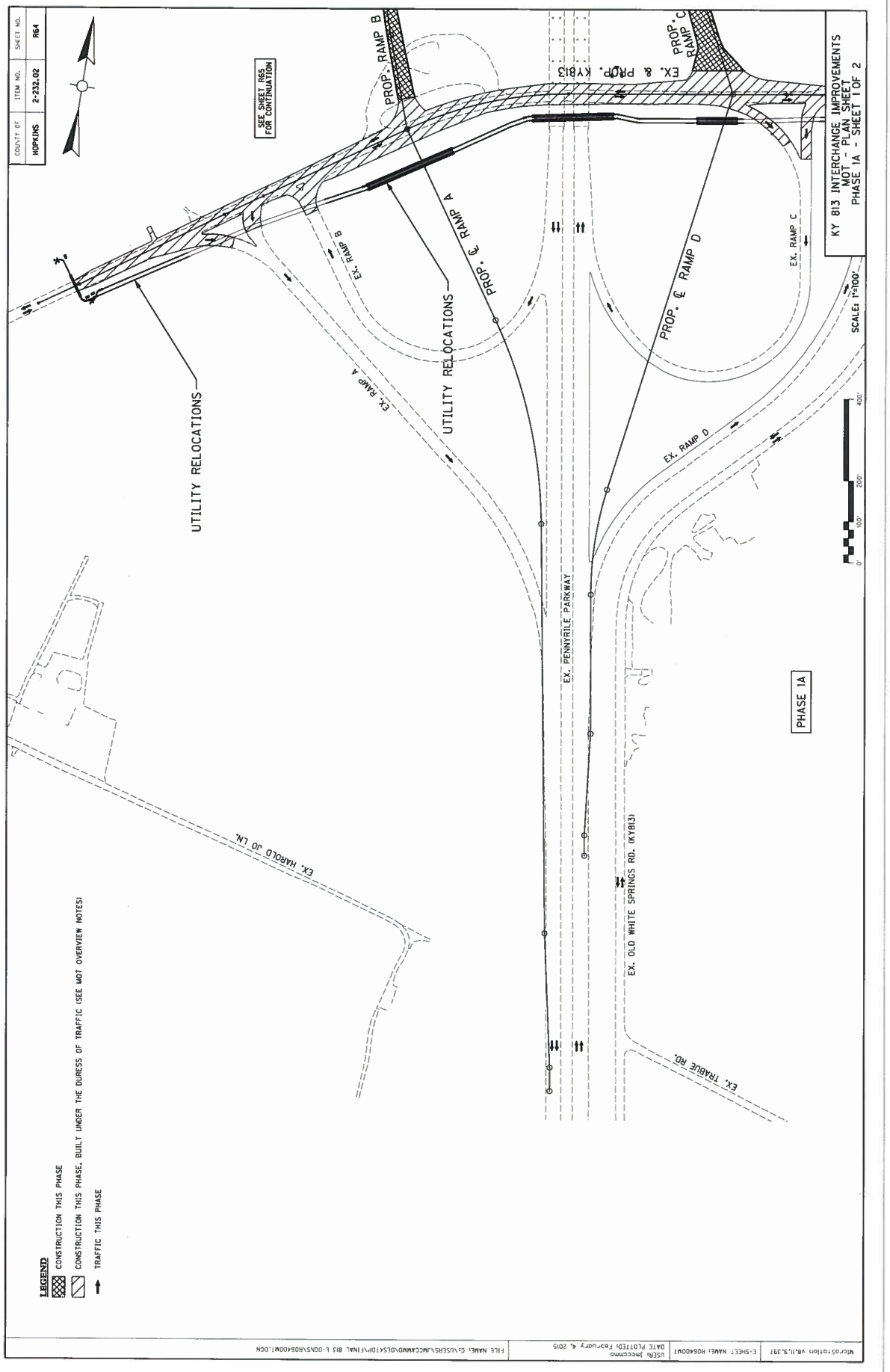
COUNTY OF
HOPKINS
ITEM NO.
2-232.02
SHEET NO.
R64
KY 813 INTERCHANGE IMPROVEMENTS
MOT - PLAN SHEET
PHASE 1A - SHEET 1 OF 2
SCALE: 1"=100'
SEE SHEET R65 FOR CONTINUATION
PROP. RAMP B
EX. & PROP. KY813
PROP. RAMP C
EX. RAMP B
PROP. ℄ RAMP A
PROP. ℄ RAMP D
EX. RAMP C
EX. RAMP A
UTILITY RELOCATIONS
UTILITY RELOCATIONS
EX. RAMP D
EX. PENNYRILE PARKWAY
EX. OLD WHITE SPRINGS RD. (KY813)
EX. HAROLD JO LN.
EX. TRABUE RD.
PHASE 1A
LEGEND
CONSTRUCTION THIS PHASE
CONSTRUCTION THIS PHASE, BUILT UNDER THE DURESS OF TRAFFIC (SEE MOT OVERVIEW NOTES)
TRAFFIC THIS PHASE
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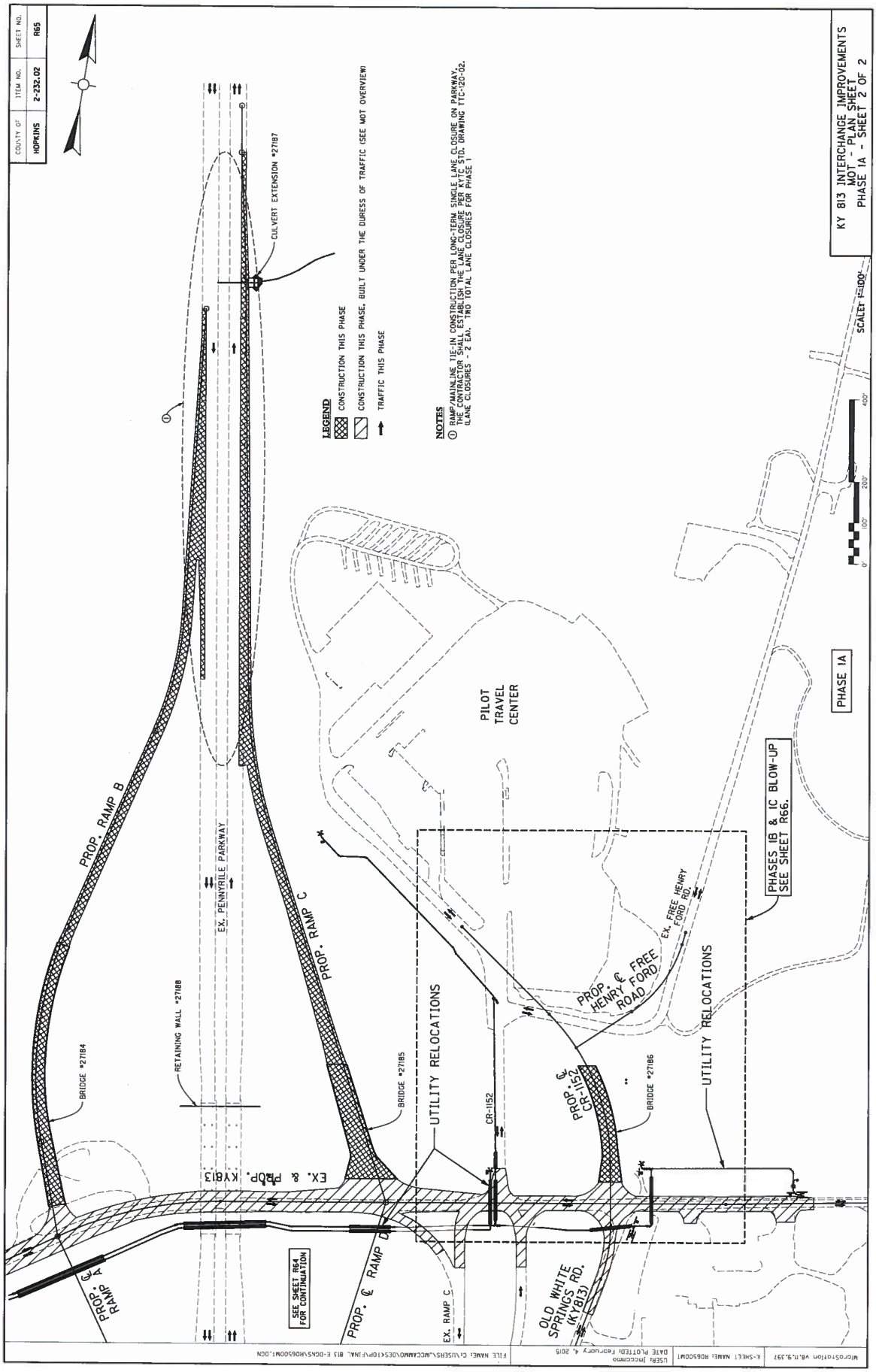

COUNTY OF
HOPKINS
ITEM NO.
2-232.02
SHEET NO.
R65
KY 813 INTERCHANGE IMPROVEMENTS
MOT - PLAN SHEET
PHASE 1A - SHEET 2 OF 2
SCALE: 1"=100'
LEGEND
CONSTRUCTION THIS PHASE
CONSTRUCTION THIS PHASE, BUILT UNDER THE DURESS OF TRAFFIC (SEE MOT OVERVIEW)
TRAFFIC THIS PHASE
NOTES
① RAMP/MAINLINE TIE-IN CONSTRUCTION PER LONG-TERM SINGLE LANE CLOSURE ON PARKWAY. THE CONTRACTOR SHALL ESTABLISH THE LANE CLOSURE PER KYTC STD. DRAWING TTC-120-02. (LANE CLOSURES - 2 EA. TWO TOTAL LANE CLOSURES FOR PHASE 1)
CULVERT EXTENSION *27187
PROP. RAMP B
EX. PENNYRILE PARKWAY
PROP. RAMP C
RETAINING WALL *27188
BRIDGE *27184
BRIDGE *27185
BRIDGE *27186
EX. & PROP. KY813
PROP. ℄ RAMP A
SEE SHEET R64 FOR CONTINUATION
PROP. ℄ RAMP D
EX. RAMP C
CR-1152
PROP. ℄ CR-1152
UTILITY RELOCATIONS
UTILITY RELOCATIONS
PILOT TRAVEL CENTER
PROP. ℄ FREE HENRY FORD ROAD
EX. FREE HENRY FORD RD.
PHASES 1B & 1C BLOW-UP SEE SHEET R66.
PHASE 1A
OLD WHITE SPRINGS RD. (KY813)
0'
100'
200'
400'
FILE NAME: C:\USERS\JMCCANNO\DESKTOP\FINAL 813 E-DGNS\H06500MT.DGN
USER: jmccanno
DATE PLOTTED: February 4, 2015
T-SHEET NAME: R06500MT
MicroStation V8.11.9.397

COUNTY OF	ITEM NO.	SHEET NO.
HOPKINS	2-232.02	R66

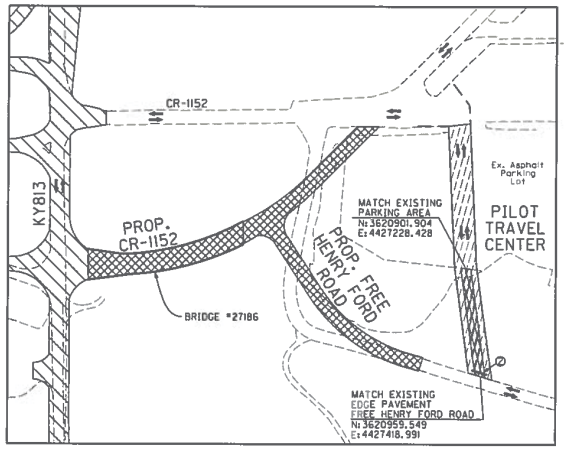
LEGEND

- CONSTRUCTION THIS PHASE
- CONSTRUCTION THIS PHASE, BUILT UNDER THE DURESS OF TRAFFIC (SEE MOT OVERVIEW)
- TEMPORARY ROAD SURFACE - 200' X 18' - 6" DGA BASE (138 TONS)
- PAVEMENT AND BRIDGE REMOVED THIS PHASE
- TRAFFIC THIS PHASE
- DIVERSION

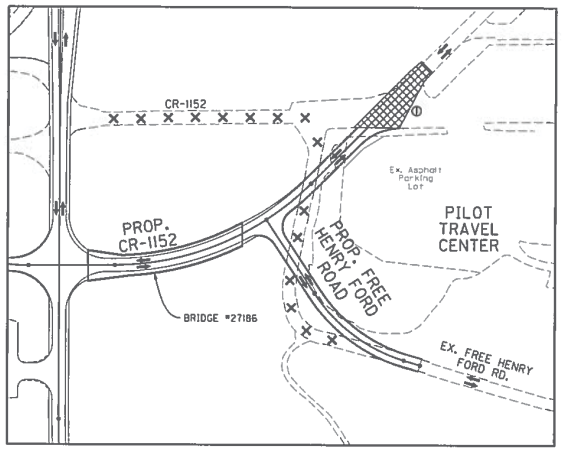
NOTES

① ASPHALT PAVING OVERLAY OPERATION PERFORMED UNDER THE DURESS OF TRAFFIC.

② CONSTRUCT 30 LF - 15" PIPE (LAYED IN EXISTING DITCH)
CONTRACTOR TO USE CAUTION WHILE WORKING IN THIS
AREA DUE TO EXISTING 3" PLASTIC GAS MAIN (ORBIT GAS TRANSMISSION)



PHASE 1B



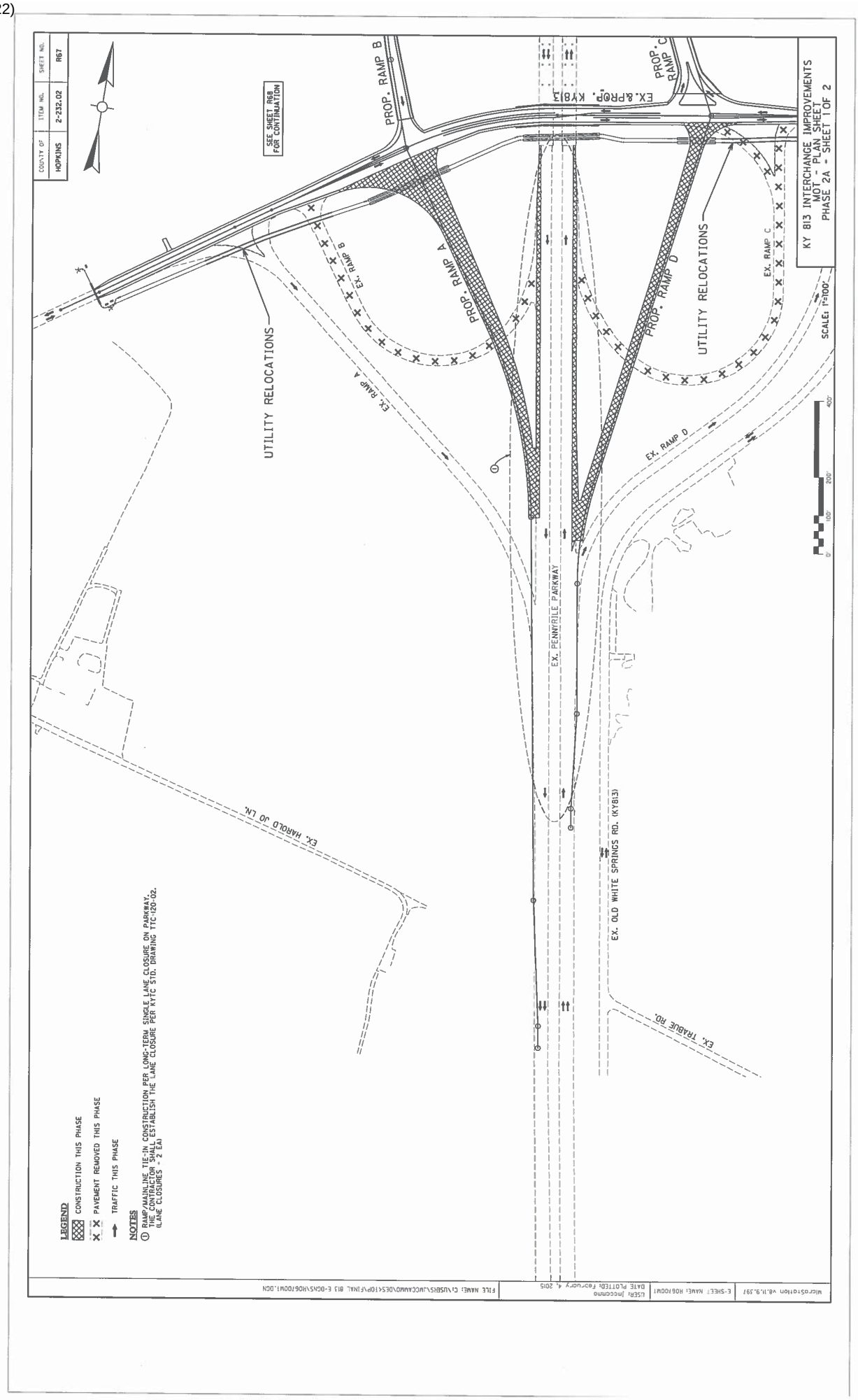
PHASE 1C

0' 100' 200' 400'

SCALE: 1"=100'

KY 813 INTERCHANGE IMPROVEMENTS
MOT - PLAN SHEET
PHASE 1B & 1C - SHEET 1 OF 1

MicroStation V8.11.9.397 | E-SHEET NAME: R066004T | USER: jmccomb | DATE PLOTTED: February 4, 2015 | FILE NAME: C:\USERS\JMCCAMMON\DESKTOP\FINAL- 813 E-DGNS\R066004T.DGN


COUNTY OF
HOPKINS
ITEM NO.
2-232.02
SHEET NO.
R67
KY 813 INTERCHANGE IMPROVEMENTS
MOT - PLAN SHEET
PHASE 2A - SHEET 1 OF 2
SCALE: 1"=100'
SEE SHEET R68 FOR CONTINUATION
PROP. RAMP B
EX. & PROP. KY813
PROP. RAMP C
EX. RAMP B
PROP. RAMP A
PROP. RAMP D
EX. RAMP C
UTILITY RELOCATIONS
UTILITY RELOCATIONS
EX. RAMP A
EX. RAMP D
EX. PENNYRILE PARKWAY
EX. OLD WHITE SPRINGS RD. (KY813)
EX. HAROLD JO LN.
EX. TRABUE RD.
LEGEND
CONSTRUCTION THIS PHASE
PAVEMENT REMOVED THIS PHASE
TRAFFIC THIS PHASE
NOTES
① RAMP/MAINLINE TIE-IN CONSTRUCTION PER LONG-TERM SINGLE LANE CLOSURE ON PARKWAY. WHEN CONSTRUCTION SHALL ESTABLISH THE LANE CLOSURE PER KYTC STD. DRAWING TTC-120-02. (LANE CLOSURES = 2 EA)
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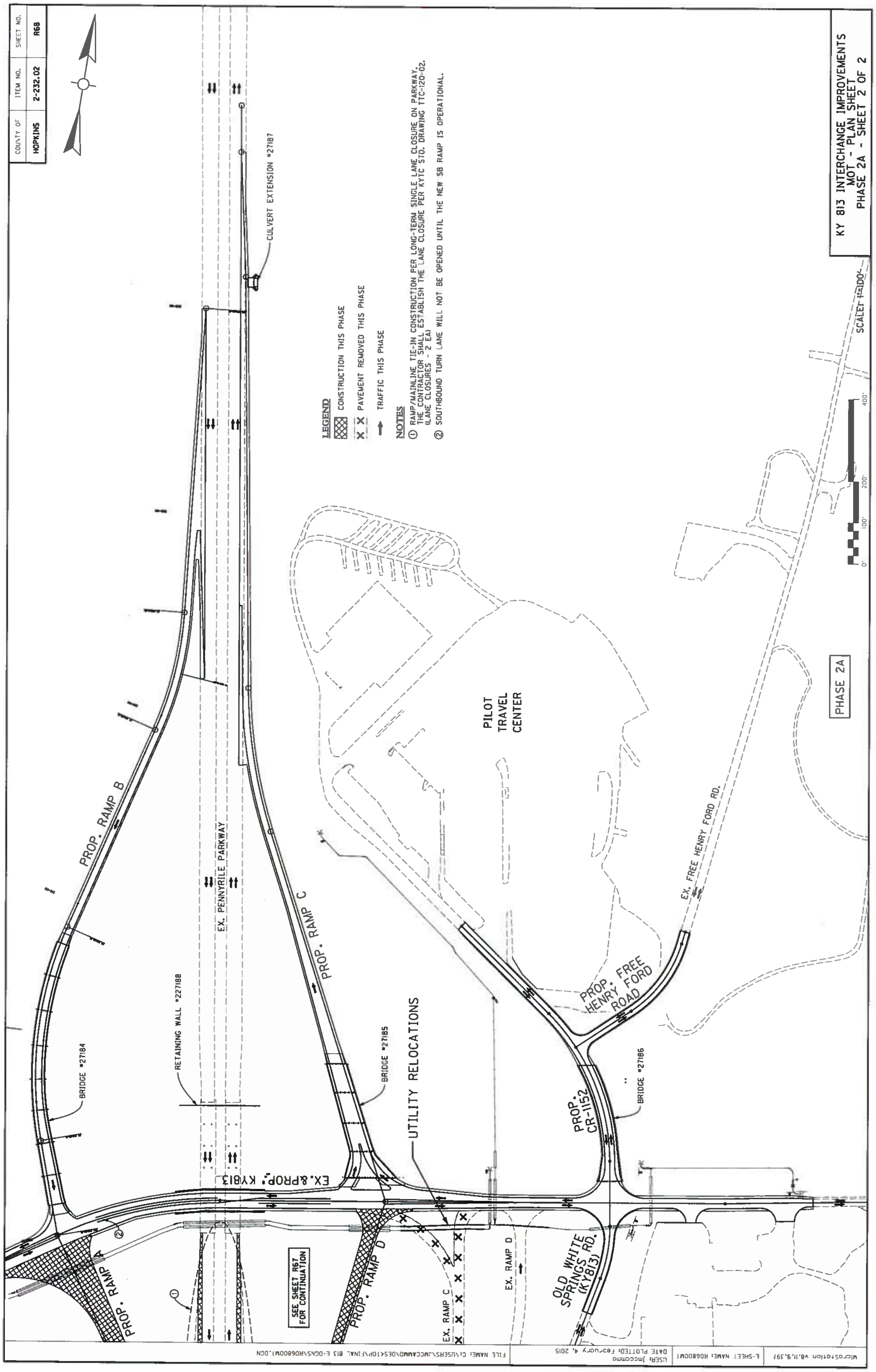
USER: jmccammo
DATE PLOTTED: February 4, 2015
E-SHEET NAME: H06700U1
MicroStation V8.11.9.397


COUNTY OF HOPKINS
ITEM NO. 2-232.02
SHEET NO. R68
KY 813 INTERCHANGE IMPROVEMENTS
MOT - PLAN SHEET
PHASE 2A - SHEET 2 OF 2
LEGEND
CONSTRUCTION THIS PHASE
PAVEMENT REMOVED THIS PHASE
TRAFFIC THIS PHASE
NOTES
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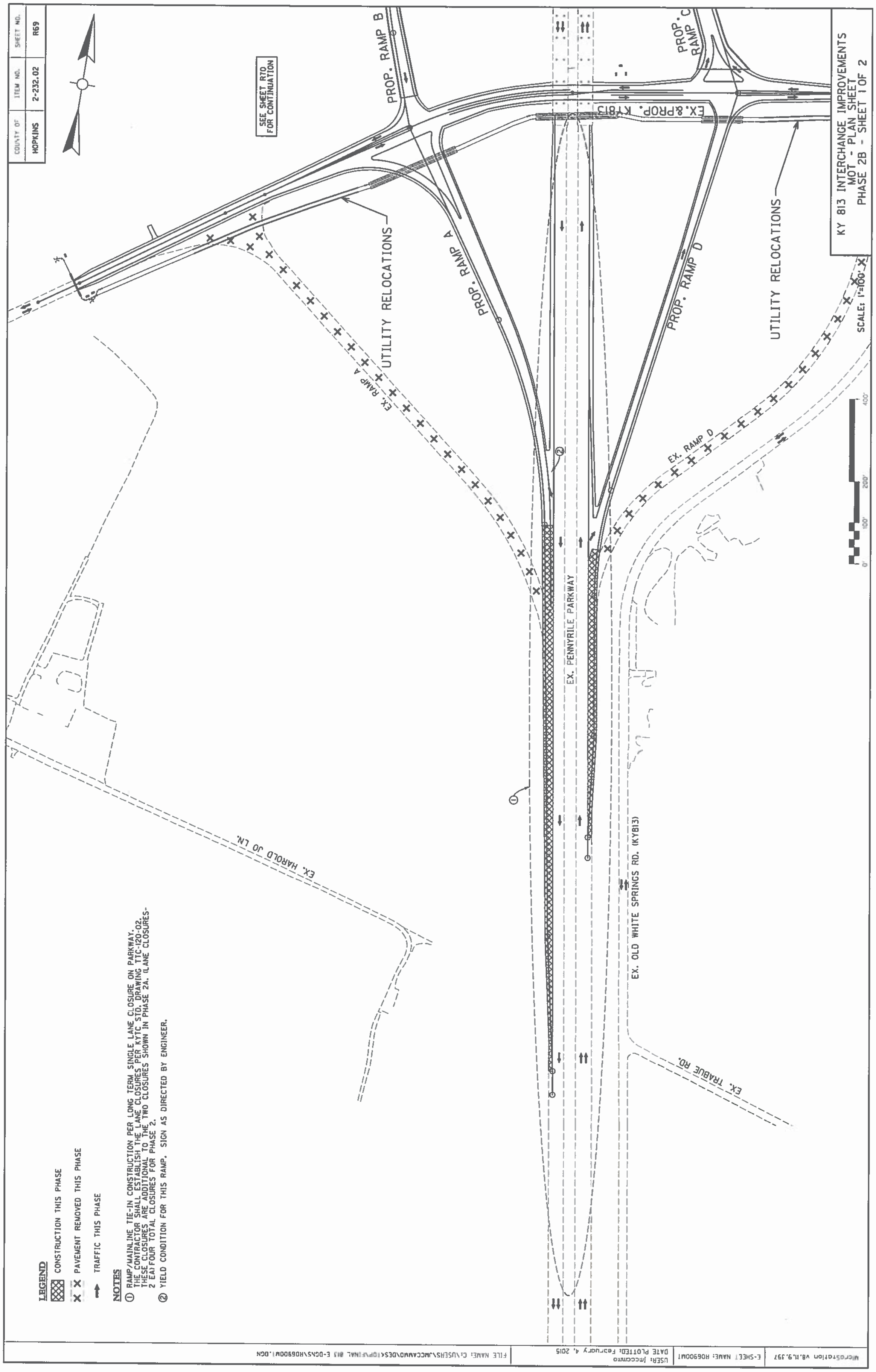
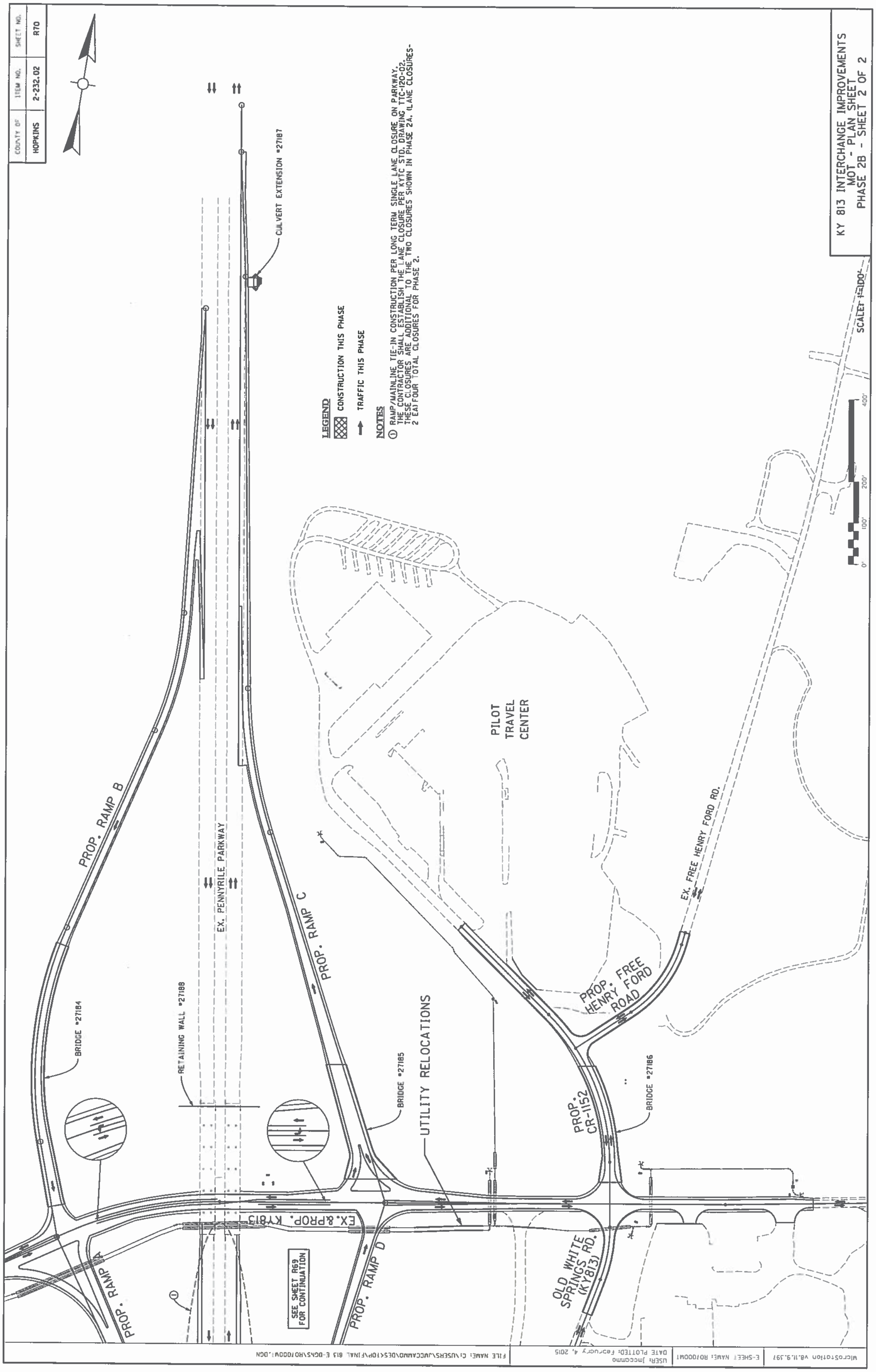
② SOUTHBOUND TURN LANE WILL NOT BE OPENED UNTIL THE NEW SB RAMP IS OPERATIONAL.
CULVERT EXTENSION #27187
PILOT TRAVEL CENTER
PHASE 2A
PROP. RAMP B
PROP. RAMP C
EX. PENNYRILE PARKWAY
EX. FREE HENRY FORD RD.
PROP. FREE HENRY FORD ROAD
RETAINING WALL #27188
BRIDGE #27184
BRIDGE #27185
BRIDGE #27186
UTILITY RELOCATIONS
PROP. CR-1152
EX.&PROP. KY813
PROP. RAMP A
PROP. RAMP D
EX. RAMP C
EX. RAMP D
OLD WHITE SPRINGS RD. (KY813)
SEE SHEET R67 FOR CONTINUATION


KY 813 INTERCHANGE IMPROVEMENTS
MOT - PLAN SHEET
PHASE 2B - SHEET 1 OF 2
COUNTY OF
HOPKINS
ITEM NO.
2-232.02
SHEET NO.
R69
SEE SHEET R70 FOR CONTINUATION
PROP. RAMP B
PROP. RAMP C
EX.&PROP. KY813
PROP. RAMP A
PROP. RAMP D
UTILITY RELOCATIONS
UTILITY RELOCATIONS
EX. RAMP A
EX. RAMP D
EX. PENNYRILE PARKWAY
EX. OLD WHITE SPRINGS RD. (KY813)
EX. HAROLD JO LN.
EX. TRABUE RD.
SCALE: 1"=100'
LEGEND
CONSTRUCTION THIS PHASE
PAVEMENT REMOVED THIS PHASE
TRAFFIC THIS PHASE
NOTES
① RAMP/MAINLINE TIE-IN CONSTRUCTION PER LONG TERM SINGLE LANE CLOSURE ON PARKWAY. THE CONTRACTOR SHALL ESTABLISH THE LANE CLOSURES PER KYTC STD. DRAWING TTC-120-02. THESE CLOSURES ARE ADDITIONAL TO THE TWO CLOSURES SHOWN IN PHASE 2A. (LANE CLOSURES-2 EA) FOUR TOTAL CLOSURES FOR PHASE 2.
② YIELD CONDITION FOR THIS RAMP. SIGN AS DIRECTED BY ENGINEER.


KY 813 INTERCHANGE IMPROVEMENTS
MOT - PLAN SHEET
PHASE 2B - SHEET 2 OF 2
COUNTY OF
HOPKINS
ITEM NO.
2-232.02
SHEET NO.
R70
SCALE: 1"=100'
LEGEND
CONSTRUCTION THIS PHASE
TRAFFIC THIS PHASE
NOTES
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CULVERT EXTENSION #27187
PILOT
TRAVEL
CENTER
EX. FREE HENRY FORD RD.
PROP. RAMP B
EX. PENNYRILE PARKWAY
PROP. RAMP C
PROP. FREE
HENRY FORD
ROAD
BRIDGE #27184
RETAINING WALL #27188
BRIDGE #27185
UTILITY RELOCATIONS
PROP.
CR-1152
BRIDGE #27186
EX.&PROP. KY813
PROP. RAMP A
SEE SHEET R69
FOR CONTINUATION
PROP. RAMP D
OLD WHITE
SPRINGS RD.
(KY813)

Special Note for Bridge Demolition, Renovation and Asbestos Abatement

If the project includes any bridge demolition or renovation, the successful bidder is required to notify Kentucky Division for Air Quality (KDAQ) via filing of form (DEP 7036) a minimum of 10 days prior to commencement of any bridge demolition or renovation work.

Any available information regarding possible asbestos containing materials (ACM) on or within bridges to be affected by the project has been included in the bid documents. These are to be included with the Contractor's notification filed with the KDAQ. If not included in the bid documents, the Department will provide that information to the successful bidder for inclusion in the KDAQ notice as soon as possible. If there are no documents stating otherwise, the bidders should assume there are no asbestos containing materials that will in any way affect the work.

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.transportation.ky.gov/

Steven L. Beshear
Governor

Michael W. Hancock, P.E.
Secretary

Memorandum

To: Robert Hoagland

CC:

From: O'Dail Lawson
Environmental Scientist IV
Division of Environmental Analysis

Date: 5/4/2015

Re: Asbestos Inspection Report for Hopkins 2-232.02

This report is prepared to accompany the 10-Day NOI for Demolition to the Division of Air Quality. Please include all pages with submittal.

Project and Structure Information

Project # Hopkins 2-232.02

Bridge # 054B00095R

Location: EB-9004 over Flat Creek

Description: The joint compound was negative for asbestos. No abatement necessary.

Inspection Date: April 28th, 2015

Results

The results revealed that there is no ACM abatement required at this time.

MRS, INC. *MRS, Inc. Analytical Laboratory Division*
332 West Broadway, Suite 613
Louisville, Kentucky 40202
(502) 495-1212
Fax: (502) 491-7111

BULK SAMPLE ASBESTOS ANALYSIS

Analysis N # 255011
Client Name: KYTC
Sampled By: O'Dail Lawson
Address: Hopkins County - 2-232.02
Item # 054 B00095R

				% FIBROUS ASBESTOS				% NON-ASBESTOS FIBERS			
Number	Color	Layered	Fibrous	Chrysotile	Amosite	crocidolite	Others	Cellulose	Fiberglass	Syn. Fiber	Other/Mat.
# 1	Black	Yes	No					2%			98%

Methodology : EPA Method 600/R-93-116
Date Analyzed : 2-May-15
Analyst : Winterford Mensah
Reviewed By: Winterford Mensah
Signature

The test relates only to the items tested. This report does not represent endorsement by NVLAP or any agency of the U.S Government. Partial Reproduction of any part of this report is strictly prohibited. Samples shall be retained for (30) days.

AIHA # 102459

AJHA #1 02459

Chain of Custody Record

Kentucky Transportation Cabinet

200 Mero Street, 5th Floor West
Frankfort, Kentucky 40622
(502) 564-7250 fax (502) 564-5655

	O'Dail Lawson o'dail.lawson@ky.gov	**Client Information**	KY TRANSPORTATION CABINET
	KYTC	Results Code:	
Address:	200 Mero Street	ND = None Detected	
	Frankfort KY	FTD = Filter Tampering or Damaged	
Phone:	502-782-5020 Fax: 502-564-5655	N/A = Not Applicable	
PO#:		Samplers (signature):	
Project or Subject Reference	Hopkins 2-232.02 054B00095R		

Sample ID	Sample Description	Collected Date	Collected Time	Analysis Requested	Matrix	Color	Cont. Type	Preservative
95R-1	Joint Compound	4/29/15	11:55	Asbestos -> Int Compound Rightstep	TAR	Black		N/A

Relinquished By:	Date/Time:	
Received By: Kimberly Mead	Date/Time: 5/01/15	
Relinquished By:	Date/Time:	
Received at Lab By:	Date/Time:	

The EI Group, Inc.

This certifies that

Tilmon O'Dail Lawson

Student Address: 132 Old Fort Drive, Georgetown, Kentucky 40324

Has attended and satisfactorily passed an examination covering the contents of an EPA/AHERA approved course entitled

Asbestos Inspector Refresher (4-Hour) Training Course

7214080013
Certificate Number

7910
Social Security Number

August 15, 2014
Course Dates

August 15, 2014
Exam Date

August 15, 2015
Expiration Date

3240 Office Pointe Place, Suite 102
Louisville, KY 40220
888-372-5859

Louisville, KY
Course Location

Barry Maxwell, Training Manager

Kerri Boddy, Principal Instructor

Kerri Boddy, Exam Administrator

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.transportation.ky.gov/

Steven L. Beshear
Governor

Michael W. Hancock, P.E.
Secretary

Memorandum

To: Robert Hoagland

CC:

From: O'Dail Lawson
Environmental Scientist IV
Division of Environmental Analysis

Date: 5/4/2015

Re: Asbestos Inspection Report for Hopkins 2-232.02

This report is prepared to accompany the 10-Day NOI for Demolition to the Division of Air Quality. Please include all pages with submittal.

Project and Structure Information

Project # Hopkins 2-232.02

Bridge # 054C00012N

Location: Free Henry Ford Road over Flat Creek

Description: There are no suspect materials on this structure.

Results

The inspection revealed that there is no suspect ACM materials; no abatement necessary

Right-of-Way Certification Form

Revised 2/22/11

☑ Federal Funded ☑ Original

☐ State Funded ☐ Re-Certification

This form must be completed and submitted to FHWA with the PS&E package for federal-aid funded Interstate, Appalachia, and Major projects. This form shall also be submitted to FHWA for all federal-aid projects that fall under Conditions No. 2 or 3 outlined elsewhere in this form. When Condition No. 2 or 3 apply, KYTC shall resubmit this ROW Certification prior to construction contract Award. For all other federal-aid projects, this form shall be completed and retained in the KYTC project file.

Date: April 30, 2015

Project Name: ET Breathitt (I-69) KY 813 Mortons Gap
Letting Date: 29May2015
Project #: 12F0 FD52 054 8442301R
County: Hopkins
Item #: 02-232.02
Federal #: NH 9004 (025)

Description of Project: Reconstruct Mortons Gap Interchange at MP 37.07 in Hopkins County to Interstate Standards (I-69 Corridor)

Projects that require NO new or additional right-of-way acquisitions and/or relocations

☐ The proposed transportation improvement will be built within the existing rights-of -way and there are no properties to be acquired, individuals, families, and businesses ("relocatees") to be relocated, or improvements to be removed as a part of this project.

Projects that require new or additional right-of-way acquisitions and/or relocations

☐ Per 23 CFR 635.309, the KYTC hereby certify that all relocatees have been relocated to decent, safe, and sanitary housing or that KYTC has made available to relocatees adequate replacement housing in accordance with the provisions of the current FHWA directive(s) covering the administration of the Highway Relocation Assistance Program and that at least one of the following three conditions has been met. (Check those that apply.)

☐ **Condition 1.** All necessary rights-of-way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish all improvements and enter on all land. Fair market value has been paid or deposited with the court.

☐ **Condition 2.** Although all necessary rights-of-way have not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Trial or appeal of some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish all improvements. Fair market value has been paid or deposited with the court for most parcels. Fair market value for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract. (See note 1 below.)

Note 1: The KYTC shall re-submit a right-of-way certification form for this project prior to AWARD of all Federal-Aid construction contracts. Award must not to be made until after KYTC has obtained full legal possession and fair market value for all parcels has been paid or deposited with the court and FHWA has concurred in the re-submitted right-of-way certification.

Right-of-Way Certification Form

Revised 2/22/11

Date: April 30, 2015

Project Name: ET Breathitt (I-69) KY 813 Mortons Gap
Project #: 12F0 FD52 054 8442301R
Item #: 02-232.02
Letting Date: 29May2015

County: Hopkins
Federal #: NH 9004 (025)

This project has 10 total number of parcels to be acquired, and 0 total number of individuals or families to be relocated, as well as 1 total number of businesses to be relocated.

7 Parcels where acquired by a signed fee simple deed and fair market value has been paid

____ Parcels have been acquired by IOJ through condemnation and fair market value has been deposited with the court

3 Parcels have not been acquired at this time *(explain below for each parcel)*

____ Parcels have been acquired or have a "right of entry" but fair market value has not been paid or has not been deposited with the court *(explain below for each parcel)*

____ Relocatees have not been relocated from parcels ____, ____, ____, ____, ____, ____, and ____ *(explain below for each parcel)*

Parcel #	Name/Station	Explanation for delayed acquisition, delayed relocation, or delayed payment of fair market value	Proposed date of payment or of relocation
19	Pilot Travel Centers, LLC	Scheduled motion for IOJ is May 4, 2015	05/04/2015
14	CSX	Communication with Sec. Hancock & CSX Execs. has occurred. ~~CSX is committed in getting parcel 14 & 30~~ Resolved.	
30	CSX		

There are 0 billboards and/or 0 cemeteries involved on this project.

There are 0 water or monitoring wells on parcels ____, ____, ____, ____, and ____. All have been acquired and are the responsibility of the project contractor to close/cap.

Form Effective Date: April 1, 2006
Last Revised: February 22, 2011

Right-of-Way Certification Form

Revised 2/22/11

☐ **Condition 3.** The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. However, all remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. The KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary rights-of-way will not be fully acquired, and/or some occupants will not be relocated, and/or the fair market value will not be paid or deposited with the court for some parcels until after bid letting. KYTC will fully meet all the requirements outlined in 23 CFR 635.309(c)(3) and 49 CFR 24.102(j) and will expedite completion of all acquisitions, relocations, and full payments after bid letting and prior to AWARD of the construction contract or force account construction. A full explanation and reason for this request, including identification of each such parcel and dates on which acquisitions, payments, and relocations will be completed, is attached to this certification form for FHWA concurrence. (See note 2.)

Note 2: The KYTC may request authorization on this basis only in unique and unusual circumstances. Proceeding to bid letting shall be the exception and never become the rule. In all cases, the KYTC shall make extraordinary efforts to expedite completion of the acquisition, payment for all affected parcels, and the relocation of all relocatees prior to AWARD of all Federal-Aid construction contracts or force account construction.

Approved:	Jennifer K. Cox		4/30/15	Right-of-Way Supervisor
	Printed Name		Signature	
Approved:	D M Loy		06 May 2015	KYTC, Director of ROW &Utilities
	Printed Name		Signature	
Approved:	DAVID WHITWORTH		5/8/15	FHWA, ROW Officer (when applicable)
	Printed Name		Signature	

UTILITY NOTES TO BE INCLUDED IN THE PROPOSAL
SPECIAL NOTES FOR UTILITY CLEARANCE
IMPACT ON CONSTRUCTION

Hopkins County
Item No. 2-232.02
I-69 & KY813 Interchange

The following is a list of utility companies involved on this project. Contractor is advised to use caution and call **BUD** prior to beginning work.

The City of Mortons Gap: Has included their facilities in the roadway contract.

AT&T: Will Complete relocating their facilities by September 1, 2015.

Kentucky Utilities: Will Complete relocating their facilities by September 1, 2015.

Orbit Gas: Has completed relocating their facilities.

PROTECTION OF UTILITIES

The location of utilities provided in the contract documents has been furnished by the facility owners and/or by reviewing record drawings and may not be accurate. It will be the roadway contractor's responsibility to locate utilities before excavating by calling the various utility owners and by examining any supplemental information supplied by the cabinet. If necessary, the roadway contractor shall determine the exact location and elevation of utilities by hand digging to expose utilities before excavating in the area of a utility. The cost of repair and any other associated costs for any damage to utilities caused by the roadway contractor's operations shall be borne by the roadway contractor.

The contractor is advised to contact the **BUD one-call system at 1-800-752-6007** at least two working days prior to excavating. Contractor should be aware that owners of underground facilities are not required to be members of the BUD one-call system. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the project area.

SPECIAL NOTE

HOPKINS COUNTY
NHPP 0411 (022)
FD52 054 9004 036-038
KY813 INTERCHANGE IMPROVEMENTS
Item 2-232.02

KY 813 UTILITY RELOCATIONS
WATER, SEWER AND CIVIL DEFENSE
FEBRUARY 2015

1. The scope of work for the "KY 813 Utility Relocations – Water, Sewer and Civil Defense" shall include the relocation of water, sanitary and civil defense facilities owned by the City of Mortons Gap. The utility relocation work is shown on project drawings U1 through U26.

2. The project includes furnishing and installing the following major work items: 4,001 lineal feet of 3- through 6-inch PVC (DR 18)/DI (CL 350) water main and appurtenances, 2,208 lineal feet of 4-inch PVC (SDR 21) force main, 1,135 lineal feet of 12-inch steel casing pipe – open cut installation, 400 lineal feet of 12-inch steel casing pipe – bore and jack, various size fittings, two (2) meter and box, connections to the existing water main and force main, and relocation of a civil defense siren pole, equipment and electrical service.

3. Any required maintenance of traffic and erosion control for the utility relocation work shall fall under the roadway project maintenance of traffic and erosion control and is not a separate pay item under the utility relocation work. See Traffic Control Sheets (R63-R70) and Erosion Control Sheets (R71-R77).

4. Pipeline Construction

   Unless otherwise indicated on the project drawings or modified by this special note, the attached Technical Specifications shall govern work on this project.

   Prior to the start of any work at the site, the Contractor and Construction Inspector shall review the proposed pipeline relocation alignment with respect to the locations marked by BUD and other existing site improvements.

   Field modifications to the proposed pipeline alignment may be necessary to avoid or minimize the effects of these potential conflicts. To avoid potential conflicts with existing utilities located perpendicular and/or parallel to the proposed main, the Contractor shall anticipate the need to use offsets, bends and fittings, whether shown on the project drawings or not, when installing the new water and force main, and for service connections.

5. Kentucky Division of Water Approvals

   The City of Mortons Gap has obtained construction approval for the sewer and water relocation work. The approval letters and permit requirements for each are provided at the end the

technical specifications. The Contract is responsible for adhering to the requirements of these approvals.

6. Bid Items

   A. The bid items shown on the General Summary Sheet (U6) shall establish the pay items for the utility relocation work. See specification section 01025 – “Measurement and Payment”, for a description of each bid item.

   B. Please note the lump sum bid price provided for Bid Item 24605ED – “Relocate Civil Defense Siren”, shall include a $5,000 allowance for electrical service installation work performed by Kentucky Utilities. The contract amount will be adjusted based on actual costs.

   C. Any work items not included on this sheet shall be considered incidental to the relocation work.

7. Inspections – the Contractor shall notify the Owner’s Construction Inspector within 48 hours prior to beginning the relocation work.

Technical Specifications

for

KY 813 Utility Relocations
Water, Sanitary and Civil Defense

City of Mortons Gap, Kentucky

February 2015

Prepared by:

HDR Engineering, Inc.
401 West Main Street
Louisville, Kentucky 40202

KY 813 Utility Relocations
City of Mortons Gap, KY

TABLE OF CONTENTS

KENTUCKY DIVISION OF WATER

- Water Letter of Construction Approval and Permit Requirements
- Sewer Letter of Construction Approval and Permit Requirements

END OF TABLE OF CONTENTS

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 WORK INCLUDED

The Contractor shall furnish all necessary labor, machinery, tools, apparatus, equipment, materials, services and other necessary supplies and perform all work shown on the Drawings and/or described in the Technical Specifications and Contract Documents at the unit or lump sum prices for the items enumerated in Part 2 of this Section.

PART 2 - PRODUCTS

2.1 CONNECTION TO FORCE MAIN, SEWER, WATER MAIN AND SERVICES

A. Payment for connections of the new force main, sewer and water main and services to the existing system will be made at the Contract unit price each which includes the excavation, backfill, cutting the existing pipe, any special fittings not included on the general summary sheet, any temporary appurtenances or bypass pumping required by the Owner, for a complete connection.

B. Transferring 1” force main service (private) to the new 4” force main, as shown on the Standard Details, sheet U8, including 30-inch plastic meter vault and cast iron lid, tapping saddle and ball and check valves is included in this pay item.

C. Reconnecting the 4-inch water service, as shown on Sheet U5 is included in this pay item.

2.2 BENDS, SOLID SLEEVES, REDUCERS AND TEES

Payment for bends, solid sleeves and tees will be made at the Contract unit price each, which shall include compensation for furnishing the fitting, excavation, bedding, jointing, friction type restraint glands, concrete thrust blocks and backfill, for a complete installation.

2.3 GATE VALVES

A. Payment for valves will be made at the Contract unit price each which shall include valves, friction type restraint glands, thrust blocking, valve box and lid, concrete pad, and all appurtenances necessary for a complete installation.

B. Flanged valves to be installed in the precast concrete meter vaults are not included in this pay item and will be paid under Item 2.11.

C. Valves related to fire hydrants are not included in this pay item and will be paid under Item 2.9.

2.4 WATER MAIN, WATER SERVICE AND FORCE MAIN

A. Payment for water mains, water services and force mains line will be made at the Contract unit price per linear foot in place, which shall include compensation for furnishing DI/PVC pipe, trenching, bedding, laying, jointing, shoring, sheeting and bracing, initial backfill, line markers and all other appurtenances required but not specifically delineated herein.

B. The quantity of piping to be paid for shall be the length of pipe measured along the centerline of the completed pipe line without deducting the length of fittings.

C. Payment for temporary and final backfill shall be included in this pay item including crushed stone material (No. 9s, DGA) under proposed roadways and entrances, asphalt material and concrete required in restoration of paved areas, that is not included as part of the Roadway Project.

D. Payment for concrete encasement or cap shall be included in this pay item and shall include all items necessary to completely encase or cap the water and sewer line in concrete the full trench width to 6-inches above the pipe.

E. All excavation is unclassified and is included in this pay item and will not be paid for separately.

F. Testing of the completed water main and service and force main and installation of temporary blow-offs and air releases to accommodate flushing, purging of air, disinfecting and pressure testing, is included in this pay item. However, no payment for the labor portion of this unit item shall be made until the line has been tested and accepted by the Engineer.

G. Payment for temporary and final seeding and final clean-up (including furnishing and placing topsoil, finish grading, seeding, mulching and erosion control, removal of construction materials and debris, cleaning, and site restoration is not included in this pay item and shall be a part of the Roadway Project.

H. Fence repair/replacement incidental to the water and sewer line construction is included in this pay item and will not be paid for separately.

2.5 STEEL ENCASEMENT PIPE, OPEN CUT AND BORE AND JACK

Payment for steel encasement pipe for water main and force main roadway crossings as shown on the Drawings shall include compensation for furnishing and installing steel encasement pipe, trenching, bedding, backfill, boring and jacking, bore and receiving pits and will be paid for at the Contract unit price per linear foot of encasement pipe for the size and type. This work shall include the encasement pipe, complete in place with fittings, blocking, spacers, end seals and all items necessary for its construction and installation.

The steel encasement pipe for the creek crossing shown on sheet U4 is paid separately under Item 2.6. Carrier pipe is paid separately under Item 2.4.

2.6 CONCRETE/STEEL ENCASED STREAM CROSSING

Payment for the concrete/steel encased stream crossing for the water main crossing of Flat Creek will be made at the Contract unit price per lineal foot in place which includes the excavation, backfill, furnishing and installing steel encasement pipe including spacers and end seals and concrete material, shaping and rolling the creek bottom and banks and installing an erosion control blanket over the disturbed area, as shown on Drawings U4 and U7 (Creek Crossing Detail), for a complete installation.

Carrier pipe is paid separately under Item 2.4.

2.7 SAFELOADING

Payment for safeloading the abandoned casing pipes will be made at the Contract unit price per cubic yard which includes the excavation at the end of the casing pipes, removing the carrier pipe, temporary bulk heading, furnishing and pumping in concrete material to fill the entire casing pipe and backfill, for a complete installation.

2.8 CUT AND PLUG

Payment to cut and plug existing system after the new system is placed into service will be made at the Contract unit price each for each size which includes the excavation, cutting, removal of section of pipe, removal of and proper disposal of pipe sewage and water, plugging the pipe with brick and grout and backfill, for a complete installation.

2.9 FIRE HYDRANT ASSEMBLY

Payment for fire hydrants will be made at the Contract unit price each which shall include fittings, pipe, hydrants, valve, anchor tees, restraint glands, thrust blocking, drainage pits and all appurtenances necessary for a complete installation.

2.10 AIR RELEASE VALVE ASSEMBLY

Payment for the water and sewer air release valve will be made at the Contract unit price each, complete in place, including all excavation, material, valve box, saddles, fittings, backfilling and labor necessary to complete the installation.

2.11 METER AND BOX

Precast concrete vaults and meters as described in Specification Section 02605 will be paid for at the Contract unit price each and shall include the furnishing and installation of the precast concrete vault, aluminum access hatch, flanged valves and piping, adapters, pipe supports and pipe seals. Also included is excavation (including rock excavation), earth backfill, and all other materials not specifically delineated herein, but necessary to complete the construction of the meter and box as shown on the Drawings.

2.12 RELOCATE CIVIL DEFENSE SIREN

Payment to relocate the civil defense siren will be made at the Contract lump sum price, complete in place, including all excavation, materials, boom cranes, basket cranes or any other equipment, attachment hardware, electrical service work, and coordination with Kentucky Utilities and Hopkins County Emergency Management, for a complete and functional installation.

The lump sum bid price provided for this item shall include a $5,000 allowance for electrical service installation work performed by Kentucky Utilities. The contract amount will be adjusted based on actual costs.

PART 3 - EXECUTION

3.1 PAY ITEMS

A. The pay items listed hereinbefore refer to the items listed on the General Summary sheet (U6) and cover all of the pay items for utility relocation work.

B. Any and all other items of Work listed in the Technical Specifications or shown on the Drawings shall be considered incidental to and included in those pay items.

END OF SECTION 01025

SECTION 01300
SUBMITTALS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Shop drawings, descriptive literature, project data and samples (when samples are specifically requested) for all manufactured or fabricated items shall be submitted by the Contractor to the Engineer for examination and review in the form and in the manner required by the Engineer. All submittals shall be furnished in at least three (3) copies to be retained by the Engineer and shall be checked and reviewed by the Contractor before submission to the Engineer. The review of the submittal by the Engineer shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is satisfactory. Review of such submittal will not relieve the Contractor of the responsibility for any errors which may exist as the Contractor shall be responsible for the dimensions and design of adequate connections, details, and satisfactory construction of all work.

1.2 DEFINITIONS

A. The term "submittals" shall mean shop drawings, manufacturer's drawings, catalog sheets, brochures, descriptive literature, diagrams, schedules, calculations, material lists, performance charts, test reports, office and field samples, and items of similar nature which are normally submitted for the Engineer's review for conformance with the design concept and compliance with the Contract Documents.

1.3 CONTRACTOR’S ULTIMATE RESPONSIBILITY

A. Review by the Engineer of shop drawings or submittals of material and equipment shall not relieve the Contractor from the responsibilities of furnishing same of proper dimension, size, quantity, materials and all performance characteristics to efficiently perform the requirements and intent of the Contract Documents. Review shall not relieve the Contractor from responsibility for errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents. Review of shop drawings shall not be construed as releasing the Contractor from the responsibility of complying with the Specifications.

1.4 GENERAL REQUIREMENTS FOR SUBMITTALS

A. Shop drawings shall be prepared by a qualified detailer. Details shall be identified by reference to sheet and detail numbers shown on Contract Documents. Where applicable, show fabrication, layout, setting and erection details. Shop drawings are defined as original drawings prepared by the Contractor, subcontractors, suppliers, or distributors performing work under this Contract. Shop drawings illustrate some portion of the work and show fabrication, layout, setting or erection details of equipment, materials and components. The Contractor shall, except as otherwise noted, have prepared the number of reviewed copies required for his distribution plus three (3) which will be retained by the Engineer and Owner. Shop drawings shall be folded to an approximate size of 8-1/2 inch x 11 inch and in such manner that the title block will be located in the lower righthand corner of the exposed surface.

B. Project data shall include manufacturer's standard schematic drawings modified to delete information which is not applicable to the Project, and shall be supplemented to provide additional information applicable to the Project. Each copy of descriptive literature shall be clearly marked to identify pertinent information as it applies to the Project.

C. Where samples are required, they shall be adequate to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged. Provide sufficient size and quantity to clearly illustrate functional characteristics of product and material, with integrally related parts and attachment devices, along with a full range of color samples.

D. All submittals shall be referenced to the applicable item, section and division of the Specifications, and to the applicable Drawing(s) or Drawing schedule(s) and shall be accompanied by transmittal forms in the format provided by the Engineer.

E. The Contractor shall review and check submittals, and indicate his review by initials and date.

F. If the submittals deviate from the Contract Drawings and/or Specifications, the Contractor shall advise the Engineer, in letter of transmittal of the deviation and the reasons therefor. All changes shall be clearly marked on the submittal with a bold mark other than red. Any additional costs for modifications shall be borne by the Contractor.

G. In the event the Engineer does not specifically reject the use of material or equipment at variance to that which is shown on the Drawings or specified, the Contractor shall, at no additional expense to the Owner, and using methods reviewed by the Engineer, make any changes to structures, piping, controls, electrical work, mechanical work, etc., that may be necessary to accommodate this equipment or material. Should equipment other than that on which design drawings are based be accepted by the Engineer, shop drawings shall be submitted detailing all modification work and equipment changes made necessary by the substituted item.

H. Additional information on particular items, such as special drawings, schedules, calculations, performance curves, and material details, shall be provided when specifically requested in the technical Specifications.

I. Submittals for all electrically operated items (including instrumentation and controls) shall include complete wiring diagrams showing lead, runs, number of wires, wire size, color coding, all terminations and connections, and coordination with related equipment.

J. Equipment shop drawings shall indicate all factory or shop paint coatings applied by suppliers, manufacturers and fabricators; the Contractor shall be responsible for insuring the compatibility of such coatings with the field-applied paint products and systems.

K. Fastener specifications of manufacturer shall be indicated on equipment shop drawings.

L. Where manufacturer's brand names are given in the Specifications for building and construction materials and products, such as grout, bonding compounds, curing compounds, masonry cleaners, waterproofing solutions and similar products, the Contractor shall submit names and descriptive literature of such materials and products he proposes to use in this Contract.

M. No material shall be fabricated or shipped unless the applicable drawings or submittals have been reviewed by the Engineer and returned to the Contractor.

N. All bulletins, brochures, instructions, parts lists, and warranties packaged with and accompanying materials and products delivered to and installed in the Project shall be saved and transmitted to the Owner through the Engineer.

1.5 CONTRACTOR RESPONSIBILITIES

A. Verify field measurements, field construction criteria, catalog numbers and similar data.

B. Coordinate each submittal with requirements of Work and Contact Documents.

C. Notify Engineer, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.

D. Begin no work, and have no material or products fabricated or shipped which required submittals until return of submittals with Engineer's stamp and initials or signature indicating review.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 02150
SHORING AND BRACING

PART 1 - GENERAL

1.1 SUMMARY

A. Shore and brace sidewalls in excavations with steel sheet piles with wale systems or soldier piles with timber lagging and tie back system as required to protect existing buildings, utilities, roadways, and improvements.

B. Maintain shoring and bracing during construction activities, and remove shoring and bracing if practical when construction and filling is complete.

C. Geotechnical investigation borings, if applicable, were drilled for this project where indicated on the drawings in the report. The geotechnical report was not prepared for purposes of bid development and the accuracy of the report is limited. The Contractor should confer with a geotechnical engineer and/or conduct additional study in the area to obtain the specific type of geotechnical information required for construction and for preparation of bids.

1.2 SUBMITTALS

A. Provide copies of information on methods of the shoring and bracing system proposed for the work, design basis, calculations where applicable, and copies of shop drawings for inclusion in the project and job-site record files.

1.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Deliver, handle, and store materials in accordance with manufacturer’s instructions.

B. Shoring and bracing system design shall be prepared and sealed by a registered professional engineer or structural engineer. The system design shall provide the sequence and method of installation and removal. Shoring and bracing system design shall be in accordance with Occupational Safety and Health Administration (OSHA) requirements 29 CFR Section 1926.652.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel Sheet Piles: Heavy-gauge steel sheet.

B. Soldier Piles: Steel H-beams.

C. Timber Lagging: Heavy timber. Pressure treated with wood preservative for use below water table for extended time period.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install in proper relation with adjacent construction. Coordinate with work of other sections.

B. Locate shoring and bracing to avoid permanent construction. Anchor and brace to prevent collapse.

END OF SECTION

SECTION 02221
ROCK REMOVAL

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall excavate rock, if encountered, as required to perform the required work, and shall dispose of the excavated material, and shall furnish acceptable material for backfill in place of the excavated rock.

B. In general, rock in pipe trenches shall be excavated so as to be not less than 6 inches from the pipe after it has been laid.

C. 805 KAR Chapter 4

PART 2 - PRODUCTS

2.1 MATERIALS

A. Rock definition: Solid mineral material that cannot be removed with a power shovel.

PART 3 - EXECUTION

3.1 EXPLOSIVES

A. No blasting allowed.

3.2 ROCK REMOVAL – MECHANICAL METHOD

A. Excavate and remove rock by the mechanical method. Drill holes and utilize mechanical impact to fracture rock.

B. In utility trenches, excavate 6 inches below invert elevation of pipe and 24 inches wider than pipe diameter.

C. Stockpile excavated materials and reuse select materials for site landscaping. Remove and dispose of excess materials offsite at approved location.

D. Correct unauthorized rock removal in accordance with backfilling and compacting requirements.

3.3 PAYMENT

A. Rock excavation shall be bid as unclassified and will **not** be paid for separately

END OF SECTION

SECTION 02225
EXCAVATING, BACKFILLING, AND COMPACTING FOR UTILITIES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall make excavations in such widths and depths as will give suitable room for below grade vaults, etc., laying pipe to the lines, grades and elevations, furnish, place and compact all backfill materials specified herein or denoted on the Drawings. The materials, equipment, labor, etc., required herein are to be considered as part of the requirements and costs for installing the various pipes, structures and other items they are incidental to.

1.2 RELATED WORK

A. Section 02221 - Rock Removal.

B. Section 02610 - Water Pipe and Fittings.

C. Section 02732 – Sewage Force Mains

PART 2 - PRODUCTS

2.1 MATERIALS

A. Crushed stone material shall conform with the requirements of the applicable sections of the Kentucky Bureau of Highways Standard Specifications and shall consist of clean, hard, and durable particles or fragments, free from dirt, vegetation or objectionable materials.

B. Two classes of crushed stone material are used in this Section. The type of material in each class is as follows:
   1. Class I - No. 9 Aggregate.
   2. Class II - Dense Graded Aggregate (DGA).

PART 3 - EXECUTION

3.1 EXCAVATION OF TRENCHES

A. Unless otherwise directed by the Engineer, trenches are to be excavated in open cuts.
   1. Where pipe is to be laid in gravel bedding or concrete cradle, the trench may be excavated by machinery to, or just below, the designated subgrade, provided that the material remaining at the bottom of the trench is no more than slightly disturbed.
   2. Where pipe is to be laid directly on the trench bottom, the lower part of trenches in earth shall not be excavated to subgrade by machinery. However, just before the pipe is to be placed, the last of the material to be excavated shall be removed by means of hand tools to form a flat or shaped bottom, true to grade, so that the pipe will have a uniform and continuous bearing and support on firm and undisturbed material between joints except for limited areas where the use of pipe slings may have disturbed the bottom.

B. Trenches shall be sufficient width to provide working space on each side of the pipe and to permit proper backfilling around the pipe.

1. The Contractor shall remove only as much of any existing pavement as is necessary for the prosecution of the Work. The pavement shall be cut with pneumatic tools, without extra compensation to the Contractor, to prevent damage to the remaining road surface. Where pavement is removed in large pieces, it shall be disposed of before proceeding with the excavation.

C. All excavated materials shall be placed a safe distance back from the edge of the trench.

D. Unless specifically directed otherwise by the Engineer, not more than 500 feet of trench shall be opened ahead of the pipe laying work of any one crew, and not more than 500 feet of open ditch shall be left behind the pipe laying work of any one crew. Watchmen or barricades, lanterns and other such signs and signals as may be necessary to warn the public of the dangers in connection with open trenches, excavations and other obstructions, shall be provided by and at the expense of the Contractor.

E. When so required, or when directed by the Engineer, only one-half of street crossings and road crossings shall be excavated before placing temporary bridges over the side excavated, for the convenience of the traveling public. All backfilled ditches shall be maintained in such manner that they will offer no hazard to the passage of traffic. The convenience of the traveling public and the property owners abutting the improvements shall be taken into consideration. All public or private drives shall be promptly backfilled or bridged at the direction of the Engineer.

F. Trench excavation shall include the removal of earth, rock, or other materials encountered in the excavating to the depth and extent shown or indicated on the Drawings.

3.2 WATER PIPE BEDDING

A. Piping for water mains shall be supported as follows:
1. The trench bottom for water main piping shall be stable, continuous, relatively smooth and free of frozen material, clodded dirt, foreign material and rock or granular material larger than 1/2 inch in diameter. The foundation for water main piping shall be prepared so that the entire load of the backfill on top of the pipe will be carried uniformly on the barrel of the pipe. Any uneven areas in the trench bottom shall be shaved-off or filled-in with Class I granular bedding. When the trench is made through rock, the bottom shall be lowered to provide 6 inches of clearance around the pipe. Class I granular bedding shall be used to bring the trench bottom to grade.

B. After each pipe has been brought to grade, aligned, and placed in final position, earth material for water main piping in areas not subject to vehicular traffic and Class I material for water mains in paved areas, shall be deposited and densified under the pipe haunches and on each side of the pipe up to the spring line of the pipe to prevent lateral displacement and hold the pipe in proper position during subsequent pipe jointing, bedding, and backfilling operations.

C. In wet, yielding and mucky locations where pipe is in danger of sinking below grade or floating out of grade or line, or where backfill materials are of such a fluid nature that such movements of pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective.

D. Where an unstable (i.e., water, mud, etc.) trench bottom is encountered, stabilization of the trench bottom is required. This is to be accomplished by undercutting the trench depth and replacing to grade with a foundation of crushed stone aggregate.

E. The depth of the foundation is dependent upon the severity of the trench bottom. The size of stone aggregate used in the foundation will be determined by the condition of the unstable material. Once the trench bottom has been stabilized, the required Class I bedding material can be placed.

F. It should be noted that no pipe shall be laid on solid or blasted rock.

G. Pipe bedding as required in Paragraphs A, B, C, and D of this Section is **not** considered a separate pay item.

3.3 WATER PIPE BACKFILLING

A. Initial Backfill:
   1. This backfill is defined as that material which is placed over the pipe from the spring line to a point 6 inches above the top of the pipe. For water main piping in areas not subject to vehicular traffic, initial backfill material shall be earth material free of rocks, acceptable to the Engineer or with Class I material when a condition exists mentioned in Paragraph A, 3. below. For water main piping in paved areas, initial backfill shall be Class I material.
   2. Material used, whether earth or Class I, in the initial backfilling is **not** a separate pay item. Payment for the material is included in the unit price per linear foot of water main.
   3. In areas where large quantities of rock are excavated and the available excavated earth in the immediate vicinity is insufficient for placing the required amount of backfill over the top of the pipe as set forth in Paragraph A.1, the Contractor shall either haul in earth or order Class I material for backfilling over the pipe. Neither the hauling and placement of earth nor the ordering and placement of Class I material to fulfill the backfill requirements set forth herein is considered a separate pay item.

B. Final Backfill:
   1. There are two cases where the method of final backfilling varies. The various cases and their trench situations are as follows:
      a. Case I - Areas not subject to vehicular traffic.
      b. Case II - Paved areas including streets, drives, parking areas, and walks.
   2. In all cases, walking or working on the completed pipelines, except as may be necessary in backfilling, will not be permitted until the trench has been backfilled to a point 6 inches above the top of the pipe. The method of final backfilling for each of the above cases is as follows:
      a. Case I - The trench shall be backfilled from a point 6 inches above the top of the pipe to a point 8 inches below the surface of the ground with earth material free from large rock (greater than 6 inches in the longest dimension), acceptable to the Engineer. The remainder of the trench shall be backfilled with earth material reasonably free of any rocks.
      b. Case II - The trench shall be backfilled from a point 6 inches above the top of the pipe to a point 12 inches below the existing pavement surface with Class I (No. 9 crushed stone aggregate) material. The backfill shall be mechanically tamped in approximately 6-inch layers to obtain the maximum possible compaction. The remaining backfill shall be as follows:
      c. For gravel surfaces - Class II (dense graded aggregate) material mechanically tamped to maximum possible compaction. The trench may be left with a slight mound if permitted by the Engineer.
      d. For bituminous and concrete surfaces - Bituminous and concrete pavement sections as detailed on the Drawings and as specified for Bituminous Pavement Replacement and Concrete Pavement Replacement.
   3. Earth and Class I material used in final backfill is not a separate pay item. Payment shall be included in the price of water main.
   4. Class II material used in final backfill shall be included in the unit price of the pipe.

C. A sufficient amount of Class II material shall be stockpiled to insure immediate replacement by the Contractor of any settled areas. No extra payment will be made for the filling in of settled or washed areas by the Contractor.

D. Excavated materials from trenches, in excess of quantity required for trench backfill, shall be disposed of by the Contractor. It shall be the responsibility of the Contractor to obtain location or permits for its disposal, unless specific waste areas have been designated on the Drawings or noted in these Specifications. The cost of disposal of excess excavated materials, as set forth herein, no additional compensation being allowed for hauling or overhaul.

3.4 GRAVITY SEWER AND FORCE MAIN PIPE BEDDING

A. Piping for gravity sewers and force mains shall be supported as follows: All gravity sewer and force main piping shall be laid on a bed of granular material except when a concrete encasement situation occurs. All pipe bedding material shall be Class I (No. 9 crushed stone aggregate) and shall be placed to a depth of 4 inches in an earth trench and 6 inches in a rock trench. Aggregate bedding shall be graded to provide for a uniform and continuous support beneath the pipe at all points.

B. After each pipe has been brought to grade, aligned, and placed in final position, Class I material for gravity sewer piping and earth material for force main piping in areas not subject to vehicular traffic and Class I material for force mains in paved areas, shall be deposited and densified under the pipe haunches and on each side of the pipe up to the spring line of the pipe to prevent lateral displacement and hold the pipe in proper position during subsequent pipe jointing, bedding, and backfilling operations.

C. In wet, yielding and mucky locations where pipe is in danger of sinking below grade or floating out of grade or line, or where backfill materials are of such a fluid nature that such movements of pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective.

D. Where an unstable (i.e., water, mud, etc.) trench bottom is encountered, stabilization of the trench bottom is required. This is to be accomplished by undercutting the trench depth and replacing to grade with a foundation of crushed stone aggregate.

E. The depth of the foundation is dependent upon the severity of the trench bottom. The size of stone aggregate used in the foundation will be determined by the condition of the unstable material. Once the trench bottom has been stabilized, the required Class I bedding material can be placed.

F. It should be noted that no pipe shall be laid on solid or blasted rock.

G. Pipe bedding, as required in Paragraphs A, B, C, and D of this Section, is **not** considered a separate pay item.

3.5 GRAVITY SEWER AND FORCE MAIN BACKFILL

A. Initial Backfill:
   1. This backfill is defined as that material which is placed over the pipe from the spring line to a point 6 inches above the top of the pipe. For gravity sewer piping the material shall be Class I (No. 9 crushed stone aggregate) and may be machine placed without compaction. Uneven places in the backfill shall be leveled by hand. For force main piping in areas not subject to vehicular traffic, initial backfill material shall be earth material free of rocks, acceptable to the Engineer or with Class I material when a condition exists mentioned in Paragraph A, 3. below. For force main piping in paved areas, initial backfill shall be Class I material.
   2. Material used, whether earth or Class I, in the initial backfilling is **not** a separate pay item. Payment for the material is included in the unit price per linear foot of gravity sewer or force main.
   3. In areas where large quantities of rock are excavated and the available excavated earth in the immediate vicinity is insufficient for placing the required amount of backfill over the top of the pipe as set forth in Paragraph A.1, the Contractor shall either haul in earth or order Class I material for backfilling over the pipe. Neither the hauling and placement of earth nor the ordering and placement of Class I material to fulfill the backfill requirements set forth herein is considered a separate pay item.

B. Final Backfill:
   1. There are two cases where the method of final backfilling varies. The various cases and their trench situations are as follows:
      a. Case I - Areas not subject to vehicular traffic.

b. Case II - Paved areas including streets, drives, parking areas, and walks.

2. In all cases, walking or working on the completed pipelines, except as may be necessary in backfilling, will not be permitted until the trench has been backfilled to a point 6 inches above the top of the pipe. The method of final backfilling for each of the above cases is as follows:
   a. Case I - The trench shall be backfilled from a point 6 inches above the top of the pipe to a point 8 inches below the surface of the ground with earth material free from large rock (greater than 6 inches in the longest dimension), acceptable to the Engineer. The remainder of the trench shall be backfilled with earth material reasonably free of any rocks.
   b. Case II - The trench shall be backfilled from a point 6 inches above the top of the pipe to a point 12 inches below the existing pavement surface with Class I (No. 9 crushed stone aggregate) material. The backfill shall be mechanically tamped in approximately 6-inch layers to obtain maximum possible compaction. The remaining backfill shall be as follows:
   c. For gravel surfaces - Class II (dense graded aggregate) material mechanically tamped to maximum possible compaction. The trench may be left with a slight mound if permitted by the Engineer.
   d. For bituminous and concrete surfaces - Bituminous and concrete pavement sections as detailed on the Drawings and as specified for Bituminous Pavement Replacement and Concrete Pavement Replacement.
3. Earth and Class I material used in final backfill is not a separate pay item. Payment shall be included in the price of gravity sewer and force main.
4. Class II material used in final backfill shall be included in the unit price for gravity sewer and force main.

C. A sufficient amount of Class II material shall be stockpiled to insure immediate replacement by the Contractor of any settled areas. No extra payment will be made for the filling in of settled or washed areas by the Contractor.

D. Excavated materials from trenches, in excess of quantity required for trench backfill, shall be disposed of by the Contractor. It shall be the responsibility of the Contractor to obtain location or permits for its disposal, unless specific waste areas have been designated on the Drawings or noted in these Specifications. The cost of disposal of excess excavated materials, as set forth herein, no additional compensation being allowed for hauling or overhaul.

3.6 COMPACTION

A. Granular Material:
   1. 85% relative density (ASTM D-4253 and D-4254).

B. Earth Material:
   1. 90% standard density (ASTM D-698).

3.7 PLACEMENT OF IDENTIFICATION TAPE

A. Detectable underground marking tape shall be placed over all utility lines. Care shall be taken to insure that the buried marking tape is not broken when installed and shall be Lineguard brand encased aluminum foil, Type III. The identification tape is manufactured by Lineguard, Inc., P.O. Box 426, Wheaton, IL 60187.

B. The identification tape shall bear the printed identification of the utility line below it, such as "Caution - Buried Below". Tape shall be reverse printed; surface printing will not be acceptable. The tape shall be visible in all types and colors of soil and provide maximum color contrast to the soil. The tape shall meet the APWA color code, and shall be 2 inches in width. Colors are: yellow - gas, green - sewer, red - electric, blue - water, orange - telephone, brown - force main.

C. The tape shall be the last equipment installed in the trench so as to be first out. The tape shall be buried 4 to 6 inches below top of grade. After trench backfilling, the tape shall be placed in the backfill and allowed to settle into place with the backfill. The tape may be plowed in after final settlement, installed with a tool during the trench backfilling process, unrolled before final restoration or installed in any other way acceptable to the Owner or Engineer.

3.8 PLACEMENT OF LOCATION WIRE

A. Detectable underground location wire shall be placed above all non-metallic water mains and force mains. Care shall be taken to insure that the buried wire is not broken.

B. The location wire shall be no smaller than #10 AWG solid copper-coated steel wire with minimum 550 lb. tensile strength or #12 AWG stranded wire, either copper-coated steel or solid copper with minimum 300 lb. tensile strength; each with HDPE insulating jacket. Wire requirements are based on electrical resistance per 1000 foot length. Copper-coated steel wire is preferred to reduce the likelihood of vandalism theft.

C. The location wire shall be continuous from valve box to valve box and shall be terminated (unconnected) with a wire nut and enough “loose” wire to extend 24 inches outside the valve box.

END OF SECTION

SECTION 02605
VALVE AND METER VAULTS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall provide all materials and labor to install a valve and meter vaults as shown on the Drawings and specified herein.

1.2 RELATED WORK

A. Section 02225 - Excavating, Backfilling, and Compacting for Utilities.

B. Section 02610 - Water Pipe and Fittings.

C. Section 02640 - Water Valves and Gates.

PART 2 - PRODUCTS

1.3 METER/VALVE BOX

A. Meter box for the 3-inch and 4-inch turbine water meters shall be precast concrete with an aluminum access hatch, H20 load rated. Meter box size shall be as detailed on the plans.

1.4 VALVES

A. Provide new valves as specified in Section 02640.

1.5 TURBINE METERS

A. Provide new coldwater turbine type with strainer that meets AWWA C701 Class II Standards.

B. Provide SENSUS Omni T or equal.

END OF SECTION

SECTION 02610
WATER PIPE AND FITTINGS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall furnish all labor, material, and equipment necessary to install water main piping together with all appurtenances as shown and detailed on the Drawings and specified herein.

1.2 RELATED WORK

A. Section 02225 - Excavating, Backfilling and Compacting for Utilities.

B. Section 02630 - Encasement Pipe.

C. Section 02640 - Water Valves and Gates.

D. Section 02660 – Domestic Water Distribution Connections

E. Section 02675 - Disinfection of Potable Water Pipe.

PART 2 - PRODUCTS

2.1 DUCTILE IRON PIPE (DIP) AND FITTINGS

A. Ductile iron pipe (DIP) shall conform to ANSI/AWWA C150/A21.50, ANSI/AWWA C151/A21.51 Standard. The pipe shall conform to pressure class 350 minimum unless noted otherwise. All fittings and joints should be capable of accommodating pressure of not less than 250 psi.

B. Fittings shall be ductile iron in accordance with AWWA C153 and have a body thickness and radii of curvature conforming to ANSI A21.10 or ANSI A21.53 for compact fittings and shall conform to the details and dimensions shown therein. Fittings shall have rubber gasket joints meeting the requirements of AWWA C111. Fittings shall be cement-mortar lined and bituminous coated to conform to the latest revision of ANSI/AWWA standards.

C. Ductile iron mechanical joint fittings shall be in accordance with AWWA C153 and have a body thickness and radii of curvature conforming to ANSI A21.10 (or A21.53 for compact fittings) and have joints in accordance with ANSI/AWWA C111/A21.11. Fittings and joints shall be supplied with all accessories.

D. Petroleum resistant gaskets (NBR or FKM) shall be provided on the DIP water service line.

E. Restrained joints for ductile iron fittings on ductile iron pipe shall be EBAA Iron Megalug Series 1100 or equivalent.

F. All ductile fittings shall be rated at 250 psi water working pressure plus water hammer. Ductile iron fittings shall be ductile cast-iron grade 70-50-05 per ASTM Specification A339-55.

G. Cement mortar lining and seal coating for pipe and fittings, where applicable shall be in accordance with ANSI/AWWA C104/A21.4. Bituminous outside coating shall be in accordance with ANSI/AWWA C151/A21.51 for pipe and ANSI/AWWA C110/A21.10 for fittings.

H. Ductile iron pipe and fittings shall be as manufactured by U.S. Pipe & Foundry Company, American Cast Iron Pipe Company, or approved equivalent.

2.2 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

A. This pipe shall meet the requirements of AWWA C900-75 for Polyvinyl chloride (PVC) Pressure Pipe. The pipe shall be PVC 1120 pipe with cast iron equivalent ODs. Pressure class (PC) 235 pipe shall met the requirements of DR 18 and PC 305 pipe meet the requirements of DR 14.

B. PVC pipe shall have a minimum cell classification of 12454B or 12454C as defined in ASTM D-1784. Rubber gasketed joints shall conform to ASTM D-3139. The gaskets for the PVC pipe joint shall conform to ASTM F-477 and D-1869.

C. Fittings for all lines 4 inches in diameter or larger shall be ductile iron and in accordance with AWWA C153 and have a body thickness and radii of curvature conforming to ANSI A21.10 or ANSI A21.53 for compact fittings. Cement mortar lining and seal coating shall be in accordance with ANSI/AWWA C104/A21.4. Bituminous outside coating shall be in accordance with ANSI/AWWA C110/A21.10. All fittings shall be rated at 250 psi water working pressure plus water hammer and be ductile cast-iron grade 70-50-05 per ASTM Specification A339.

D. Fittings for all lines less than 4 inches in diameter shall be PVC gasketed push-on type or socket glue-type manufactured specifically for the pipe class being utilized. All socket-glue type connections shall be joined with PVC solvent cement conforming to ASTM D2564. Product and viscosity shall be as recommended by the pipe and fitting manufacturer to assure compatibility. Solvent cement joints shall be made up in accordance with the requirements of ASTM D2855. Appropriate thrust blocks shall be provided for the fittings.

E. Rubber gasket joints shall provide adequate expansion to allow for a 50 degree change in temperature on one length of pipe. Lubrication for rubber connected couplings shall be water soluble, non-toxic, be non-objectionable in taste and odor and have no deteriorating affect on the PVC or rubber gaskets and shall be as supplied by the pipe manufacturer.

F. All pipe and couplings shall bear identification markings that will remain legible during normal handling, storage and installation, which have been applied in a manner what will not reduce the strength of the pipe or the coupling or otherwise damage them. Pipe and coupling markings shall include the nominal size and OD base, material code designation, dimension ratio number, ASTM Pressure Class, ASTM designation number for this standard, manufacturer's name or trademark, seal (mark) of the testing agency that verified the suitability of the pipe material for potable-water service. Each marking shall be applied at intervals of not more than 5 feet for the pipe and shall be marked on each coupling.

PART 3 - EXECUTION

3.1 LAYING DEPTHS

A. In general, water mains shall be laid with a minimum cover of 48 inches, except as otherwise indicated on the Drawings.

3.2 PIPE LAYING

A. Slip Jointed and Heat-Fusion Welded Pipe:
   1. All pipe shall be laid with ends abutting and true to the lines and grades indicated on the plans. Pipe shall be fitted and matched so that when laid in the Work, it will provide a smooth and uniform invert. Supporting of pipe shall be as set out in Section 02225 and in no case shall the supporting of pipe on blocks be permitted.

2. Before each piece of pipe is lowered into the trench, it shall be thoroughly swabbed out to insure it being clean. Any piece of pipe or fitting which is known to be defective shall not be laid or placed in the lines. If any defective pipe or fittings shall be discovered after the pipe is laid, it shall be removed and replaced with a satisfactory pipe or fitting without additional charge. In case a length of pipe is cut to fit in a line, it shall be so cut as to leave a smooth end at right angles to the longitudinal axis of the pipe. Bevel can be made with hand or power tools.
3. The interior of the pipe, as the Work progresses, shall be cleaned of dirt, jointing materials, and superfluous materials of every description. When laying of pipe is stopped for any reason, the exposed end of such pipe shall be closed with a plywood plug fitted so as to exclude earth or other material and precautions taken to prevent floatation of pipe by runoff into trench.
4. Anchorage of Bends:
    a. At all tees, plugs, caps and bends of 11-1/4 degrees and over, and at reducers or in fittings where changes in pipe diameter occur, movement shall be prevented by using suitable harness, thrust blocks or ballast. Thrust blocks shall be as shown on the Drawings, with sufficient volumes of concrete being provided; however, care shall be taken to leave weep holes unobstructed and allow for future tightening of all nearby joints. Unless otherwise directed by the Engineer, thrust blocks shall be placed so that pipe and fitting joints will be accessible for repair.
    b. Bridles, harness or pipe ballasting shall meet with the approval of the Engineer. Steel rods and clamps shall be galvanized or otherwise rust-proofed or painted.
    c. No extra pay shall be allowed for work on proper anchorage of pipe, fittings or other appurtenances. Such items shall be included in the price bid for the supported item.
5. No backfilling (except for securing pipe in place) over pipe will be allowed until the Engineer has the opportunity to make an inspection of the joints, alignment and grade in the section laid, but such inspection shall not relieve the Contractor of further liability in case of defective joints, misalignment caused by backfilling and other such deficiencies that are noted later.
6. All joint surfaces shall be cleaned immediately before jointing the pipe. The joint shall be lubricated in accordance with the pipe manufacturer's recommendations. Each pipe unit shall then be carefully pushed into place without damage to pipe or gasket. All pipe shall be provided with home marks to insure proper gasket seating. Details of gasket installation and joint assembly shall follow the manufacturer's direction for the joint type and material of the pipe. The resulting joints shall be watertight and flexible.

3.3 TESTING OF WATER PIPE

A. The completed work shall comply with the provisions listed herein, or similar requirements which will insure equal or better results. Suitable test plugs, water pump or other equipment and apparatus, and all labor required to properly conduct the tests shall be furnished by the Contractor at no expense to the Owner.

B. Water main piping shall be pressure tested to 250 percent of the normal system operating pressure or to 100 percent of the rated working pressure of the pipe, whichever is less. At no time shall the test pressure exceed 100 percent of the pipe's rated working pressure. A pipe section shall be accepted if the test pressure does not fall more than 5 psi during the minimum 2-hour test period. The pipe shall be tested for allowable leakage according to AWWA C-600 or C-605, as applicable, concurrently with the pressure test.

C. Where practicable, pipelines shall be tested between line valves or plugs in lengths of not more than 6,000 feet. Testing shall proceed from the source of water toward the termination of the line. The line shall be tested upon the completion of the first 6,000 feet. After the completion of two (2) consecutive tests without failure, the Contractor, at his option and with the Engineer's approval, may discontinue testing until the system is complete.

D. All pipe, fittings and other materials found to be defective under test shall be removed and replaced at the Contractor's expense.

E. Before applying the specified test pressure, air shall be expelled completely from the pipe, valves and hydrants. If permanent air vents are not located at high points within the test section, the Contractor shall install corporation cocks at such points so that the air can be expelled as the line is filled with water.

F. All piping shall be tested for leakage at a pressure no less than that specified for the pressure test. The leakage shall be defined as the quantity of water that must be supplied to the tested section to maintain pressure within 5 psi of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water. The leakage shall be less than an allowable amount determined by the following equation:

$$L = \frac{SD\,(P)^{1/2}}{133{,}200}$$

Where: L = allowable leakage (gallons/hour)
S = length of pipe tested, in feet
D = nominal diameter of pipe (inches)
P = test pressure (psig)

G. Should the sections under test fail to meet the requirements, the Contractor shall do all work of locating and repairing the leaks and retesting as the Engineer may require without additional compensation. All visible leaks are to be repaired regardless of the amount of leakage.

H. If in the judgment of the Engineer, it is impracticable to follow the foregoing procedures for any reason, modifications in the procedures shall be made as required and as acceptable to the Engineer, but in any event, the Contractor shall be responsible for the ultimate tightness of the line within the above test requirements.

3.4 PLACEMENT OF IDENTIFICATION TAPE

A. The placement of detectable underground marking tape shall be installed over all water mains as specified in Section 02225.

3.5 PLACEMENT OF LOCATION WIRE

A. The placement of detectable underground location wire shall be installed above all non-metallic water main as specified in Section 02225.

END OF SECTION

SECTION 02630
ENCASEMENT PIPE

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall furnish all labor, material, and equipment necessary to install encasement pipe together with all appurtenances as shown and detailed on the Drawings and specified herein.

1.2 RELATED WORK

A. Section 02225 - Excavating, Backfilling and Compacting for Utilities.

B. Section 02610 - Water Pipe and Fittings.

C. Section 02732 - Sewage Force Mains.

PART 2 - PRODUCTS

2.1 STEEL PIPE

A. Steel seamless pipe shall be new Grade B steel material, with a minimum yield of 35,000 psi and a wall thickness as shown below unless otherwise required by a permitting authority. The material shall conform to the chemical and mechanical requirements of the latest revision of ASTM A139 "Electric-Fusion (ARC) - Welded Steel Pipe (NPS 4 and Over)," unless otherwise stated herein.

B. The minimum wall thickness shall be in accordance with the following table:

Steel Casing Pipe Wall Thickness

Casing Diameter (inches)	(Minimum Wall Thickness Under Railroads (inches)	Minimum Wall Thickness All Other Uses (inches)
16 and under	0.250	0.250
18	0.281	0.250
20 and 22	0.312	0.281
24	0.344	0.312
26	0.375	0.344
28	0.406	0.375
30	0.438	0.406
32	0.469	0.438
34 and 36	0.500	0.469
38	0.531	0.500
40	0.563	0.531
42	0.594	0.563

C. Welds of the steel casing pipe shall be solid butt-welds with a smooth non-obstructing joint inside and conform to all specifications as required by American Welding Society (AWS). The casing pipe shall be installed without bends. All welders and welding operators shall be qualified as prescribed by AWS requirements.

D. The wall thickness at any point shall be within 12.5% inches of the nominal metal thickness specified.

E. Hydrostatic testing shall not be necessary.

F. A protective coating shall be applied to each length of pipe. Following an SSPC SP-7 "Brush-Off Blast Cleaning" surface preparation, 3 (dry) mils of Tnemec-Primer 10-99 (red), or Porter International Primer 260FD (red), or an equivalent thickness of an approved equivalent paint shall be applied in the manner recommended by the respective paint manufacturer.

G. Each length of pipe shall be legibly marked, stating: manufacturer, diameter, wall thickness and primer.

H. Precaution shall be taken to avoid deforming the pipe and damaging the primer during shipping.

2.2 CARRIER PIPE SPACERS

A. Carrier pipes installed inside encasement pipes shall be centered throughout the length of encasement pipe. Centering shall be accomplished by the installation of polyethylene pipeline spacers attached to the carrier pipe in such manner as to prevent the dislodgement of the spacers as the carrier pipe is pulled or pushed through the encasement pipe. Spacers shall be of such dimensions to provide: full supportive load capacity of the pipe and contents; of such thickness to allow installation and/or removal of the pipe; and to allow no greater than ½ inch movement of the carrier pipe within the cover pipe after carrier pipe is installed.

B. Spacers shall be located immediately behind each bell and at a maximum spacing distance as follows:

Carrier Pipe Diameter (inches)	Maximum Spacing (feet)
2 - 2-1/2	4
3 - 8	7
10 - 26	10
28	9
30	8
32	7
34	6
36 - 38	5.5
40 - 44	5

C. The materials and spacing to be used shall be accepted by the Engineer prior to installation. The polyethylene pipeline spacers shall be manufactured by Pipeline Seal and Insulator, Inc. (PSI), Raci Spacers, Inc., or equivalent. Installation shall be in accordance with manufacturer's recommendations.

2.3 ENCASEMENT PIPE END SEALS

After installation of the carrier pipe within the encasement pipe, the ends of the casing shall be sealed with either a wraparound or a pull-on casing end seals fabricated of minimum 1/8-inch thick neoprene rubber. The seals shall be attached to the encasement pipe and the carrier pipe by 304 stainless steel band clamps not less than 1/2-inch wide. The casing end seals shall be as manufactured by Advance Products & Systems, Inc., or approved equivalent.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Where shown on the Drawings, the Contractor shall install encasement pipe. Install encasement pipe to maintain alignment, grade and the circular shape of the encasement pipe. The encasement pipe shall be straight and true in alignment; and any significant deviation from line or grade, in the opinion of the Engineer or permitting authority, shall be sufficient cause for disapproving or rejecting the installation.

B. Two methods of installation are designated, the open-cut method and the boring method.
   1. The open-cut method shall consist of placing the encasement pipe in the excavated trench, then installing the carrier pipe inside the encasement pipe. Excavation, bedding and backfilling shall be in accordance with Section 02225.
   2. The boring and jacking method consists of pushing or jacking the encasement pipe into the subsurface material as an auger cuts out the material or after the auger has completed the bore. Where designated on the drawings, crossings beneath state maintained roads, railroads, or other surfaces not to be disturbed, shall be installed by boring and jacking of steel casing pipe followed by installation of the carrier pipe within the casing pipe. The Contractor shall provide a jacking pit, bore through the earth, and/or rock, jack the casing pipe into proper line and grade and then install the carrier pipe within the casing pipe. The approach trench shall be large enough to accommodate one section of casing pipe, the jacks and blocking. The Contractor shall furnish and use adequate equipment to maintain the line and grade.

C. The carrier pipe shall be ductile iron, polyvinyl chloride, or polyethylene pipe as designated on the Drawings. The carrier pipe shall be installed using pipe spacers as described in this Section. Carrier pipe will not be permitted to rest on bells or couplings.

D. Following installation of the carrier pipe, the ends of the encasement pipe shall be sealed with products of the type described in this Section.

3.2 DAMAGE

A. The cost of repairing damage to the highway or railroad which is caused by a boring and jacking installation shall be borne by the Contractor.

END OF SECTION

SECTION 02640
WATER VALVES AND GATES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall furnish all labor, material, and equipment necessary to install valves together with all appurtenances as shown and detailed on the Drawings and specified herein.

1.2 RELATED WORK

A. Section 02225 - Excavating, Backfilling and Compacting for Utilities.

B. Section 02610 - Water Pipe and Fittings.

C. Section 02645 - Hydrants.

1.3 SUBMITTALS

A. Complete shop drawings of all valves and appurtenances shall be submitted to the Engineer in accordance with the requirements of Section 01300.

B. The manufacturer shall furnish the Engineer two (2) copies of an affidavit stating that the valve and all materials used in its construction conform to the applicable requirements of the latest revision of the applicable AWWA Standard, and that all tests specified therein have been performed and that all test requirements have been met.

C. The Engineer shall be furnished two (2) copies of an affidavit that the "Valve Protection Testing" has been done and that all test requirements have been met.

D. The Engineer shall be furnished with two (2) copies of an affidavit that inspection, testing and rejection are in accordance with the latest revision of the applicable AWWA Standard.

PART 2 - PRODUCTS

2.1 GATE VALVES

A. All gate valves shall be of the resilient seat type in accordance with the latest revision of AWWA C509 Standard. The valve body, bonnet and gate castings shall be ductile iron or cast iron. The valve shall have a non-rising stem (NRS), fully bronze mounted or stainless steel with o-ring seals. Valve body and bonnet, inside and out, shall be fully coated with fusion bonded epoxy coating in accordance with AWWA C550 Standard. Valves shall have a rated working pressure of 200 psi.

B. Gate valves for buried service shall be furnished with mechanical joint end connections, unless otherwise shown on the Drawings or specified herein. The end connection shall be suitable to receive ductile iron or PVC pipe.

C. Gate valves for meter pits, pump stations, or other installations as shown on the Drawings shall be furnished with flanged joint and connections, non rising stem and handwheel operator. The gate valve shall have the direction of opening cast on the rim of the handwheel and provided with chain and lock.

D. All gate valves shall have the name or monogram of the manufacturer, the year the valve casting was made, the size of the valve, and the working pressure cast on the body of the valve.

E. Buried service gate valves shall be provided with a 2-inch square operating nut and shall be opened by turning to the left (counterclockwise).

F. Buried service gate valves shall be installed in a vertical position with valve box as detailed on the Drawings. They shall be set vertically and properly adjusted so that the cover will be in the same plane as the finished surface of the ground or street.

G. Valves shall be those manufactured by Mueller, M & H Valve Company, American or approved equivalent.

2.2 VALVE BOXES

A. Each buried stop and valve shall be provided with a suitable valve box. Boxes shall be of the adjustable, telescoping, heavy-pattern type with the lower part of cast iron and the upper part of steel or cast iron. They shall be so designed and constructed as to prevent the direct transmission of traffic loads to the pipe or valve.

B. The upper or sliding section of the box shall be provided with a flange having sufficient bearing area to prevent undue settlement. The lower section of the box shall be designed to enclose the operating nut and stuffing box of the valve and rest on the valve bonnet.

C. The boxes shall be adjustable through at least 6 inches vertically without reduction of the lap between sections to less than 4 inches.

D. The inside diameter of boxes for valves shall be at least 4-1/2 inches, and the lengths shall be as necessary for the depths of the valves or stops with which the boxes are to be used.

E. Covers for valves shall be close fitting and substantially dirt-tight.

F. The top of the cover shall be flush with the top of the box rim. An arrow and the word OPEN to indicate the direction of turning to open the valve shall be cast in the top of the valve covers.

2.3 FIBERGLASS LINE MARKER FOR BURIED VALVES

A. General:
   1. Design: The continuous fiberglass reinforced composite line marker shall be a single piece marker capable of simple, permanent installation by one person using a manual driving tool. The marker, upon proper installation, shall resist displacement from wind and vehicle impact forces. The marker shall be of a constant flat "T" cross-sectional design with reinforcing support ribs incorporated longitudinally along each edge to provide sheeting protection and structural rigidity. The bottom end of the marker shall be pointed for ease of ground penetration.
   2. Material: The marker shall be constructed of a durable, UV resistant, continuous glass fiber and marble reinforced, thermosetting composite material which is resistant to impact, ozone, and hydrocarbons within a service temperature range of -40^0 F to $+140^0$ F.
   3. Workmanship: The marker shall exhibit good workmanship and shall be free of burns, discoloration, cracks, bulges or other objectionable marks which would adversely affect the marker's performance or serviceability.
   4. Marking: Each marker shall be permanently marked "Water Line Below." The letters shall be a minimum of 2 inches in height. A black line shall be stamped horizontally across the front of the marker near the bottom to indicate proper burial depth as shown in the standard detail. The marker shall be a CRM-375 as manufactured by Carsonite International, or approved equivalent.

B. Physical and Mechanical Requirements:
   1. Dimensions: The marker shall conform to the shape and overall dimensions shown in the standard detail.

2. Mechanical Properties: The marker shall have the minimum mechanical properties as follows:

Property	ASTM Test Method	Minimum Value
Ultimate Tensile Strength	D-638	50,000 psi
Ultimate Compressive Strength	D-638	45,000 psi
Specific Gravity	D-792	1.7
Weight % Glass Reinforcement	D-2584	50%
Barcol Hardness	D-2583	47

3. Color Fastness: The marker shall be pigmented throughout the entire cross-section so as to produce a uniform color which is an integral part of the material. Ultraviolet resistant materials shall be incorporated in the construction to inhibit fading or cracking of the delineator upon field exposure.
4. Vehicle Impact Resistance: The marker shall be capable of self-erecting and remain functional after being subjected to a series of ten head on impacts by a typical passenger sedan at 35 miles per hour. The marker shall retain a minimum of 60 percent of its sheeting.

C. Reflectors:
1. The reflector shall be of impact resistant, pressure sensitive retro-reflective sheeting which shall be subject to approval by the Engineer. The sheeting shall be of appropriate color to meet MUTCD requirements.
2. Mounting: The retro-reflective sheeting shall consist of a minimum of a 3-inch wide strip placed a maximum of 2 inches from the top of the post unless otherwise specified.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Valves shall be installed as nearly as possible in the positions indicated on the Drawings consistent with conveniences of operating the handwheel or wrench. All valves shall be carefully erected and supported in their respective positions free from all distortion and strain on appurtenances during handling and installation.

B. All material shall be carefully inspected for defects in workmanship and material, all debris and foreign material cleaned out of valve openings and seats, all operating mechanisms operated to check their proper functioning, and all nuts and bolts checked for tightness.

C. Valves and other equipment which do not operate easily or are otherwise defective shall be repaired or replaced at the Contractor's expense.

D. Valves shall not be installed with stems below the horizontal.

E. Valves shall be set plumb and supported adequately in conformance with the instructions of the manufacturer. Valves mounted on the face of concrete shall be shimmed vertically and grouted in place. Valves in the control piping shall be installed so as to be easily accessible.

F. Where chain wheels are provided for remote operation of valves, two (2) S-shaped hooks shall be provided for each valve to enable the chains to be hooked so as not to interfere with personnel traffic.

G. Valves shall be provided with extension stems where required for convenience of operation. Extension stems shall be provided for valves installed underground and elsewhere so that the operating wrench does not exceed 6 feet in length.

3.2 PAINTING

A. Valves shall be factory primed and fully coated, inside and out, with fusion bonded epoxy in accordance with the latest revision of AWWA C550 Standard.

END OF SECTION

SECTION 02645
HYDRANTS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall furnish all labor, materials, and equipment required to complete the work of installing fire hydrants with all appurtenances as shown on the Drawings and specified herein.

PART 2 - PRODUCTS

2.1 FIRE HYDRANTS

A. Fire hydrants shall be improved AWWA compression model with 5-1/4 inch hydrant valve, two (2) 2-1/2 inch hose outlets, one (1) 4-1/2 inch pumper nozzle, national standard threads, national standard pentagon operating nut opening left. Fire hydrant shall be equipped with safety flanges designed to prevent barrel breakage when struck by a vehicle, flanged inlets and auxiliary gate valves. Fire hydrants connected to mains 4 inches and larger shall have 6-inch inlets. Fire hydrants shall be Mueller Super Centurion 200 as manufactured by Mueller Company, or approved equivalent.

B. Each fire hydrant shall be installed with an auxiliary gate valve and valve box; valve box cover shall be marked “water” as required.

C. Inlet cover depth shall be minimum of 48 inches and the minimum dimension from ground to centerline of lowest opening shall be 18 inches. Fire hydrants shall be supported on a poured-in-place concrete thrust block and provided with a drainage pit as indicated on Standard Detail Sheet.

2.2 SPARE PARTS

A. The Owner shall be furnished with two (2) hydrant barrel wrenches, four (4) spanner wrenches and two (2) operating nut wrenches.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fire hydrants shall be installed in accordance with the manufacturer's directions and as detailed on the Drawings.

END OF SECTION

SECTION 02675
DISINFECTION OF POTABLE WATER PIPE

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall furnish all labor, material and water necessary to disinfect the potable water pipe as shown on the Drawings and specified herein.

1.2 RELATED WORK

A. Section 02225 - Excavating, Backfilling and Compacting for Utilities.

B. Section 02610 - Water Pipe and Fittings.

C. Section 02640 - Water Valves and Gates

PART 2 - PART 2 - PRODUCTS (NOT USED)

PART 3 - PART 3 - EXECUTION

3.1 DISINFECTION OF WATER LINES

A. Sterilization of pipe line shall be in accordance with the American Water Works Association Specification C651-05 using liquid chlorine. The pipe line shall be disinfected by using a 50 mg/l chlorine solution for a contact period of 24 hours. At the end of the 24 hour retention period, the required residual shall be 25 ppm. Pipes shall be thoroughly flushed upon meeting the chlorine residual requirements.

B. Before the pipes are placed in service, samples of the water must be taken by the Contractor and submitted to the public health agency for testing. No pipes shall be placed in service until the samples have been approved by the agency. The Contractor shall bear all the cost of sampling, testing, and postage.

C. Sampling locations shall be approved by the Engineer and the public health agency having jurisdiction.

D. A satisfactory report for the section(s) under test must be submitted to the owner and the Engineer before authorizing domestic consumption of the water.

E. Sterilization procedures shall be continued until approved samples have been obtained.

END OF SECTION

SECTION 02732
SEWAGE FORCE MAINS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Contractor shall furnish all labor, material, and equipment necessary to install force main piping together with all appurtenances as shown and detailed on the Drawings and specified herein.

1.2 RELATED WORK

A. Section 02225 - Excavating, Backfilling, and Compacting for Utilities.

B. Section 02630 - Encasement Pipe.

PART 2 - PRODUCTS

2.1 POLYVINYL CHLORIDE (PVC) FORCE MAIN PIPE

A. Polyvinyl chloride (PVC) pipe for force mains shall be PVC pressure rated pipe with integral bell joints with rubber O-ring seals, of the pressure class and dimension ration shown on the Drawings.

B. All PVC pipe shall conform to the latest revisions of ASTM D-1784 (PVC Compounds), ASTM D-2241 (PVC Plastic Pipe, SDR) and ASTM D-2672 (Bell - End PVC Pipe). PVC pipe shall have a minimum cell classification of 12454B or 12454C ad defined in ASTM D-1784. Rubber gasketed joints shall conform to ASTM D-3139. The gaskets for the PVC pipe joint shall conform to ASTM F-477 and D-1869.

C. Fittings for all lines 4 inches in diameter or larger shall be ductile iron and in accordance with AWWA C153 and have a body thickness and radii of curvature conforming to ANSI A21.10 or ANSI A21.53 for compact fittings. Cement mortar lining and seal coating shall be in accordance with ANSI/AWWA C104/A21.4. Bituminous outside coating shall be in accordance with ANSI/AWWA C110/A21.10. All fittings shall be rated at 250 psi water working pressure plus water hammer and be ductile cast-iron grade 70-50-05 per ASTM Specification A339.

D. All pipe and couplings shall bear identification markings that will remain legible during normal handling, storage and installation, which have been applied in a manner what will not reduce the strength of the pipe or the coupling or otherwise damage them. Pipe and coupling markings shall include the nominal size and OD base, material code designation, dimension ratio number, ASTM Pressure Class, ASTM designation number for this standard, manufacturer's name or trademark, seal (mark) of the testing agency that verified the suitability of the pipe material for sanitary sewer service. Each marking shall be applied at intervals of not more than 5 feet for the pipe and shall be marked on each coupling.

2.2 FIBERGLASS LINE MARKER

A. General:
   1. Design: The continuous fiberglass reinforced composite line marker shall be a single piece marker capable of simple, permanent installation by one person using a manual driving tool. The marker, upon proper installation, shall resist displacement from wind and vehicle impact forces. The marker shall be of a constant flat "T" cross-sectional design with reinforcing support ribs incorporated longitudinally along each edge to provide sheeting protection and structural rigidity. The bottom end of the marker shall be pointed for ease of

ground penetration.

2. Material: The marker shall be constructed of a durable, UV resistant, continuous glass fiber and marble reinforced, thermosetting composite material which is resistant to impact, ozone, and hydrocarbons within a service temperature range of -40^0 F to $+140^0$ F.
3. Workmanship: The marker shall exhibit good workmanship and shall be free of burns, discoloration, cracks, bulges or other objectionable marks which would adversely affect the marker's performance or serviceability.
4. Marking: Each marker shall be permanently marked "Water Line Below." The letters shall be a minimum of 2 inches in height. A black line shall be stamped horizontally across the front of the marker near the bottom to indicate proper burial depth as shown in the standard detail. The marker shall be a CRM-375 as manufactured by Carsonite International, or approved equivalent.

B. Physical and Mechanical Requirements:
1. Dimensions: The marker shall conform to the shape and overall dimensions shown in the standard detail.
2. Mechanical Properties: The marker shall have the minimum mechanical properties as follows:

Property	ASTM Test Method	Minimum Value
Ultimate Tensile Strength	D-638	50,000 psi
Ultimate Compressive Strength	D-638	45,000 psi
Specific Gravity	D-792	1.7
Weight % Glass Reinforcement	D-2584	50%
Barcol Hardness	D-2583	47

3. Color Fastness: The marker shall be pigmented throughout the entire cross-section so as to produce a uniform color which is an integral part of the material. Ultraviolet resistant materials shall be incorporated in the construction to inhibit fading or cracking of the delineator upon field exposure.
4. Vehicle Impact Resistance: The marker shall be capable of self-erecting and remain functional after being subjected to a series of ten head on impacts by a typical passenger sedan at 35 miles per hour. The marker shall retain a minimum of 60 percent of its sheeting.

C. Reflectors:
1. The reflector shall be of impact resistant, pressure sensitive retro-reflective sheeting which shall be subject to approval by the Engineer. The sheeting shall be of appropriate color to meet MUTCD requirements.
2. Mounting: The retro-reflective sheeting shall consist of a minimum of a 3-inch wide strip placed a maximum of 2 inches from the top of the post unless otherwise specified.

PART 3 - EXECUTION

3.1 LAYING DEPTHS

A. In general, force mains shall be laid with a minimum cover of 48 inches, except as otherwise indicated on the Drawings.

3.2 WATER PIPE CROSSING CONCRETE ENCASEMENT

A. At locations shown on the Drawings, required by the Specifications, or as directed by the Engineer, steel encasement pipe or concrete encasement shall be used when the clearance between the proposed sewage force main and any existing water pipe is 18 inches or less.

B. Whether the proposed sewage force main is above or below the existing water pipe, if concrete encasement is utilized, the concrete encasement shall fully encase the sewer pipe and extend to the spring line of the water pipe. Concrete encasement or steel encasement pipe shall extend in each direction along the sewer pipe until the encased sewer pipe is 10 feet from the water pipe, measured perpendicular to the water pipe.

C. Concrete shall be 3000 psi and shall be mixed sufficiently wet to permit it to flow between and under pipes to form a continuous bridge. In tamping the concrete, care shall be taken not to disturb the grade or line of either pipe or damage the joints. Steel encasement pipe shall meet the requirements of Section 02630.

D. Concrete or Steel Encasement Pipe for this Work is not a separate pay item and will be considered incidental to sewage force main installation.

3.3 PIPE LAYING

A. All pipe shall be laid with ends abutting and true to the lines and grades indicated on the Drawings. Pipe shall be fitted and matched so that when laid in the Work, it will provide a smooth and uniform invert. Supporting of pipe shall be as set out in Section 02225 and in no case shall the supporting of pipe on blocks be permitted.

B. Before each piece of pipe is lowered into the trench, it shall be thoroughly swabbed out to insure it being clean. Any piece of pipe or fitting which is known to be defective shall not be laid or placed in the lines. If any defective pipe or fittings shall be discovered after the pipe is laid, it shall be removed and replaced with a satisfactory pipe or fitting without additional charge. In case a length of pipe is cut to fit in a line, it shall be so cut as to leave a smooth end at right angles to the longitudinal axis of the pipe. Bevel can be made with hand or power tools.

C. The interior of the pipe, as the Work progresses, shall be cleaned of dirt, jointing materials, and superfluous materials of every description. When laying of pipe is stopped for any reason, the exposed end of such pipe shall be closed with a plywood plug fitted so as to exclude earth or other material and precautions taken to prevent floatation of pipe by runoff into trench.

D. Anchorage of Bends:
   1. At all tees, plugs, caps and bends of 11-1/4 degrees and over, and at reducers or in fittings where changes in pipe diameter occur, movement shall be prevented by using suitable harness, thrust blocks or ballast. Thrust blocks shall be as shown on the Drawings, with sufficient volumes of concrete being provided; however care shall be taken to leave weep holes unobstructed and allow for future tightening of all nearby joints. Unless otherwise directed by the Engineer, thrust blocks shall be placed so that pipe and fitting joints will be accessible for repair.
   2. Bridles, harness or pipe ballasting shall meet with the approval of the Engineer. Steel rods and clamps shall be galvanized or otherwise rust-proofed or painted.
   3. No extra pay shall be allowed for work on proper anchorage of pipe, fittings or other appurtenances. Such items shall be included in the price bid for the supported item.

3.4 TESTING OF FORCE MAINS

A. The completed work shall comply with the provisions listed herein, or similar requirements which will insure equal or better results. Suitable test plugs, water pump or other equipment and apparatus, and all labor required to properly conduct the tests shall be furnished by the Contractor at no expense to the Owner.

B. Force main piping shall be pressure tested to 250 percent of the normal system operating pressure or to 100 percent of the rated pressure of the pipe, whichever is less. At no time shall the test pressure exceed 100 percent of the pipe's rated pressure. A pipe section shall be accepted if the test pressure does not fall more than 5 percent during the 4-hour period.

C. All piping shall be tested for leakage at a pressure no less than that specified for the pressure test. The leakage shall be less than an allowable amount determined by the following equation:

$$L \quad \frac{ND\,(P)^{1/2}}{7{,}400}$$

Where: L = allowable leakage (gallon/hour)
N = number of joints in length of pipeline tested
D = nominal diameter of pipe (inches)
P = test pressure (psig)

D. Should the sections under test fail to meet the requirements, the Contractor shall do all work locating and repairing the leaks and retesting as the Engineer may require without additional compensation.

E. If in the judgment of the Engineer, it is impracticable to follow the foregoing procedures for any reason, modifications in the procedures shall be made as required and as acceptable to the Engineer, but in any event, the Contractor shall be responsible for the ultimate tightness of the line within the above test requirements.

END OF SECTION

KDOW

Construction Approvals

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

January 8, 2015

Honorable Frank Stafford
Mayor of Mortons Gap
131 Cross Street
Mortons Gap, KY 42440

Re: KY 813 Utility Relocations – Water, Sewer and Civil Defense
Hopkins County, Kentucky
Project ID #: 14-0770
Nortonville WWTP
Activity ID #: 1899, APE20140001
Receiving Treatment Plant KPDES #: KY0066583

Dear Mayor Stafford:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of approximately 2,208 linear feet of 4 inch PVC force main. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the attached construction permit.

If we can be of any further assistance or should you wish to discuss this correspondence, please do not hesitate to contact Daniel Kulik at 502-564-3410 extension 4828.

Sincerely,

Mark Rasche

Mark Rasche, P.E.
Supervisor, Engineering Section
Water Infrastructure Branch
Division of Water

MR / DK

Enclosures
c: Hopkins County Health Department (by e-mail only)
HDR Engineering, Inc. (by e-mail only)
Division of Plumbing (by e-mail only)

Sewer Line Construction
Nortonville WWTP
Facility Requirements

Activity ID No.: APE20140001

GACT0000000001 (KY 813 Utility Relocations) 2,208 linear feet of 4 inch PVC force main:

Submittal/Action Requirements:

Condition No.	Condition
S-1	When this project is completed, the applicant shall: submit written certification: Due 30 calendar days after Completion of Construction to the Division of Water that the facilities have been constructed and tested in accordance with the approved plans and specifications and the approval conditions. Such certification shall be signed by a registered professional engineer. Failure to certify may result in penalty assessment and/or future approvals being withheld. [401 KAR 5:005 Section 24(2)]

Narrative Requirements:

Condition No.	Condition
T-1	The plans and specifications submitted for the project are approved by the Department of Environmental Protection as to sanitary features, subject to the requirements contained within the permit. [401 KAR 5:005 Section 24(3)]
T-2	Authority to construct these sewers is hereby granted. This approval is issued under the provisions of KRS Chapter 224.10-100 (19) regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any permits or licenses required by this cabinet and other state, federal, and local agencies. [401 KAR 5:005 Section 24(3)(c)2]
T-3	A permit to construct a facility shall be effective and valid for twenty-four (24) months upon issuance unless otherwise conditioned. If construction has not commenced within twenty-four (24) months following a permit's issuance, a new permit shall be obtained before construction may begin. [401 KAR 5:005 Section 24(1)]
T-4	The permit is issued to the applicant, and the permittee shall remain the responsible party for compliance with all applicable statutes and administrative regulations until a notarized applicable change in ownership certification is submitted and the transfer of ownership is acknowledged by the cabinet. [401 KAR 5:005 Section 28(1)]
T-5	The issuance of a permit by the cabinet does not convey any property rights of any kind or any exclusive privilege. [401 KAR 5:005 Section 24(5)]
T-6	There shall be no deviations from the plans and specifications submitted with the application or the conditions specified, unless authorized in writing by the cabinet. [401 KAR 5:005 Section 24(3)(b)1]

Sewer Line Construction
Nortonville WWTP
Facility Requirements

Activity ID No.: APE20140001

GACT0000000001 (continued):

Narrative Requirements:

Condition No.	Condition
T-7	For subfluvial pipe crossings, a floodplain construction permit will not be required pursuant to KRS 151.250, if the following requirements of 401 KAR 4:050 Section 2 are met: 1) During the construction of the crossing, no material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc., unless prior approval has been obtained from the cabinet. 2) The trench shall be backfilled as closely as possible to the original contour. All excess material from construction of the trench shall be disposed of outside of the flood plain, unless the applicant has received prior approval from the cabinet to fill within the flood plain. 3) For subfluvial crossings of erodible channels, there shall be at least thirty (30) inches of clear cover above the top of the pipe or conduit at all points. 4) For subfluvial crossings of nonerodible channels, there shall be at least six (6) inches of clear cover above the top of the pipe or conduit at all points, and the pipe or conduit shall be encased on all sides by at least six (6) inches of concrete. 5) The weight of a pipe and its contents during normal operating conditions at all points must exceed that of an equal volume of water, or the applicant must provide the division with sufficient information to show that the pipe and joints have sufficient strength. Contact the Floodplain Management Section of the Surface Water Permits Branch at (502) 564-3410 with any question on these requirements. [KRS 151.250 & 401 KAR 4:060]
T-8	If any portion of the sewer project will be constructed in or along a stream or wetland, contact the Water Quality Certification Section, located within the Water Quality Branch, at 502-564-3410, to determine if a 401 certification will be required. [KRS 224.16-050]
T-9	Facilities shall be designed and constructed in accordance with the "Recommended Standards for Wastewater Facilities" of the Great Lakes-Upper Mississippi River Board of State Public Health and Environmental Managers, commonly referred to as "Ten States' Standards", 2004 edition. [401 KAR 5:005 Section 7(1)(a)]
T-10	Gravity sewer lines and force mains shall be designed and constructed to give mean velocities, when flowing full, of not less than two (2) feet per second. Velocity calculations shall incorporate roughness coefficients pursuant to 401 KAR 5:005 Section 8(8). [401 KAR 5:005 Section 8(8)]
T-11	Sewer line pipe material, joints, fittings, and installation shall conform to the latest ASTM specifications. [Ten States (WW) 33.7-33.9]
T-12	Gravity sewer lines and force mains shall have a minimum of thirty (30) inches of cover or provide comparable protection. [401 KAR 5:005 Section 8(9)]
T-13	Sewer lines crossing water mains shall be laid to provide a vertical distance of eighteen (18) inches between the outside of the water main and the outside of the sewer line. This shall be the case where the water main is either above or below the sewer line. The crossing shall be arranged so that the sewer line joints are equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer line to prevent damage to the water main. [Ten States (WW) 38.32]

Sewer Line Construction
Nortonville WWTP
Facility Requirements

Activity ID No.: APE20140001

GACT0000000001 (continued):

Narrative Requirements:

Condition No.	Condition
T-14	Sewer lines shall be laid at least ten (10) feet horizontally from any existing or proposed water main. The distance shall be measured from edge to edge. [Ten States (WW) 38.31]
T-15	If gravity sewer lines and force mains are to be constructed in fill areas, the fill areas shall be compacted to ninety-five (95) percent density as determined by the Standard Proctor Density test or to a minimum of ninety (90) percent density as determined by the Modified Proctor Density test prior to the installation of the sewer lines. [401 KAR 5:005 Section 8(10)]

Sewer Line Construction
Nortonville WWTP
Facility Requirements

Activity ID No.: APE20140001

PORT0000000004 (Force Main) 2,208 linear feet of 4 inch PVC force main:

Narrative Requirements:

Condition No.	Condition
T-1	The integrity of any proposed force main shall be verified by leakage tests. The specifications shall include testing methods and leakage limits. [401 KAR 5:005 Section 8(6)(b)]
T-2	Each high point in the sewer force main shall have an automatic air release valve. [401 KAR 5:005 Section 8(19)]
T-3	Adequate thrust blocks shall be provided at all significant bends in any proposed sewer force main, in order to prevent movement of the main. [Ten States (WW) 49.4]
T-4	Pumps and force mains handling raw wastewater shall be capable of passing spheres of at least three (3) inches in diameter. Pump suction and discharge openings, as well as sewer force main pipe, shall be a minimum of four (4) inches in diameter. The above requirements do not apply to grinder pump stations or force mains directly connected to grinder pump stations. [Ten States (WW) 42.33, 49.1]

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

December 16, 2014

Honorable Frank Stafford
Mortons Gap Water Dept
PO Box 367
Mortons Gap, KY 42440

RE: Mortons Gap Water Dept
AI # 33926, APE20140001
PWSID # 0540269-14-001
KY 813 Utility Relocations Permit
Hopkins County, KY

Dear Honorable Stafford:

We have reviewed the plans and specifications for the above referenced project. The plans include the replacement of 2,835 LF of 6-inch PVC and 557 LF, 4-inch PVC and 599 LF of 4-inch DI. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the attached construction permit.

If you have any questions concerning this project, please contact Mr. Mortaza Tabayeh at 502-564-3410 extension 4826.

Sincerely,

Greg Goode, P.E.
Engineering Section
Water Infrastructure Branch
Division of Water

GG: MT

Enclosures
C: HDR Engineering Inc
Hopkins County Health Department
Public Service Commission (by email only)
Division of Plumbing (by email only)

Distribution-Water Line Extension

Mortons Gap Water Dept
Facility Requirements

Activity ID No.: APE20140001

PORT0000000001 (WLE) Replace 2,835 LF of 6-inch PVC and 557 LF of 4-inch PVC and 599 LF of 4-inch DI:

Narrative Requirements:

Condition No.	Condition
T-1	Construction of this project shall not result in the water system's inability to supply consistent water service in compliance with 401 KAR 8:010 through 8:600. [401 KAR 8:100 Section 5]
T-2	The public water system shall not implement a change to the approved plans without the prior written approval of the cabinet. [401 KAR 8:100 Section 4(3)]
T-3	A proposed change to the approved plans affecting sanitary features of design shall be submitted to the cabinet for approval in accordance with Section 2 of this administrative regulation. [401 KAR 8:100 Section 4(2)]
T-4	During construction, a set of approved plans and specifications shall be available at the job site. Construction shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 3(1)]
T-5	Unless construction begins within two (2) years from the date of approval of the final plans and specifications, the approval shall expire. [401 KAR 8:100 Section 3(3)]
T-6	Upon completion of construction, a professional engineer shall certify in writing that the project has been completed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 4(1)]
T-7	The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. [Recommended Standards for Water Works 8.2.1, Drinking Water General Design Criteria IV.1.a]
T-8	Water lines should be hydraulically capable of a flow velocity of 2.5 ft/s while maintaining a pressure of at least 20 psi. [Drinking Water General Design Criteria IV.1.b]
T-9	The normal working pressure in the distribution system at the service connection shall not be less than 30 psi under peak demand flow conditions. Peak demand is defined as the maximum customer water usage rate, expressed in gallons per minute (gpm), in the pressure zone of interest during a 24 hour (diurnal) time period. [Drinking Water General Design Criteria IV.1.d]
T-10	When static pressure exceeds 150 psi, pressure reducing devices shall be provided on mains or as part of the meter setting on individual service lines in the distribution system. [Drinking Water General Design Criteria IV.1.c]

Distribution-Water Line Extension
Mortons Gap Water Dept
Facility Requirements

Activity ID No.: APE20140001

PORT0000000001 (continued):

Narrative Requirements:

Condition No.	Condition
T-11	The minimum size of water main in the distribution system where fire protection is not to be provided should be a minimum of three (3) inch diameter. Any departure from minimum requirements shall be justified by hydraulic analysis and future water use, and can be considered only in special circumstances. [Recommended Standards for Water Works 8.2.2, Drinking Water General Design Criteria IV.2.b]
T-12	Water mains not designed to carry fire-flows shall not have fire hydrants connected to them. [Recommended Standards for Water Works 8.4.1.b]
T-13	Flushing devices should be sized to provide flows which will give a velocity of at least 2.5 feet per second in the water main being flushed. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b]
T-14	No flushing device shall be directly connected to any sewer. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b]
T-15	Pipe shall be constructed to a depth providing a minimum cover of 30 inches to top of pipe. [Drinking Water General Design Criteria IV.3.a]
T-16	Water mains shall be covered with sufficient earth or other insulation to prevent freezing. [Recommended Standards for Water Works 8.7]
T-17	A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. Stones found in the trench shall be removed for a depth of at least six inches below the bottom of the pipe. [Recommended Standards for Water Works 8.7]
T-18	Water line installation shall incorporate the provisions of the AWWA standards and/or manufacturer's recommended installation procedures. [Recommended Standards for Water Works 8.7]
T-19	All materials used for the rehabilitation of water mains shall meet ANSI/NSF standards. [Recommended Standards for Water Works 8.1]
T-20	Packing and jointing materials used in the joints of pipe shall meet the standards of AWWA and the reviewing authority. [Recommended Standards for Water Works 8.1]
T-21	All tees, bends, plugs and hydrants shall be provided with reaction blocking, tie rods or joints designed to prevent movement. [Recommended Standards for Water Works 8.7]

Distribution-Water Line Extension

Mortons Gap Water Dept
Facility Requirements

Activity ID No.: APE20140001

PORT0000000001 (continued):

Narrative Requirements:

Condition No.	Condition
T-22	All materials including pipe, fittings, valves and fire hydrants shall conform to the latest standards issued by the ASTM, AWWA and ANSI/NSF, where such standards exist, and be acceptable to the Division of Water. [Recommended Standards for Water Works 8.1]
T-23	Water mains which have been used previously for conveying potable water may be reused provided they meet the above standards and have been restored practically to their original condition. [Recommended Standards for Water Works 8.1]
T-24	Manufacturer approved transition joints shall be used between dissimilar piping materials. [Recommended Standards for Water Works 8.1]
T-25	Pipes and pipe fittings containing more than 8% lead shall not be used. All products shall comply with ANSI/NSF standards. [Recommended Standards for Water Works 8.1]
T-26	The minimum size of water main which provides for fire protection and serving fire hydrants shall be six?inch diameter. [Recommended Standards for Water Works 8.2, Drinking Water General Design Criteria IV.2.a]
T-27	Gaskets containing lead shall not be used. Repairs to lead?joint pipe shall be made using alternative methods. [Recommended Standards for Water Works 8.1]
T-28	Pipe materials shall be selected to protect against both internal and external pipe corrosion. [Recommended Standards for Water Works 8.1]
T-29	Dead end mains shall be equipped with a means to provide adequate flushing. [Recommended Standards for Water Works 8.2]
T-30	The hydrant lead shall be a minimum of six inches in diameter. Auxiliary valves shall be installed on all hydrant leads. [Recommended Standards for Water Works 8.4.3]
T-31	A sufficient number of valves shall be provided on water mains to minimize inconvenience and sanitary hazards during repairs. [Recommended Standards for Water Works 8.3]
T-32	Wherever possible, chambers, pits or manholes containing valves, blow?offs, meters, or other such appurtenances to a distribution system, shall not be located in areas subject to flooding or in areas of high groundwater. Such chambers or pits should drain to the ground surface, or to absorption pits underground. The chambers, pits and manholes shall not connect directly to any storm drain or sanitary sewer. Blow?offs shall not connect directly to any storm drain or sanitary sewer. [Recommended Standards for Water Works 8.6]

Distribution-Water Line Extension
Mortons Gap Water Dept
Facility Requirements

Activity ID No.: APE20140001

PORT0000000001 (continued):

Narrative Requirements:

Condition No.	Condition
T-33	At high points in water mains where air can accumulate provisions shall be made to remove the air by means of air relief valves. [Recommended Standards for Water Works 8.5.1]
T-34	Automatic air relief valves shall not be used in situations where flooding of the manhole or chamber may occur. [Recommended Standards for Water Works 8.5.1]
T-35	The open end of an air relief pipe from automatic valves shall be extended to at least one foot above grade and provided with a screened, downward?facing elbow. [Recommended Standards for Water Works 8.5.2.c]
T-36	Discharge piping from air relief valves shall not connect directly to any storm drain, storm sewer, or sanitary sewer. [Recommended Standards for Water Works 8.5.2.d]
T-37	Water pipe shall be constructed with a lateral separation of 10 feet or more from any gravity sanitary or combined sewer measured edge to edge where practical. If not practical a variance may be requested to allow the water pipe to be installed closer to the gravity sanitary or combined sewer provided the water pipe is laid in a separate trench or undisturbed shelf located on one side of the sewer with the bottom of the pipe at least 18 inches above the top of the gravity sanitary or combined sewer pipe. [Drinking Water General Design Criteria IV.3.b]
T-38	Water lines crossing sanitary, combined or storm sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sanitary, combined or storm sewer with preference to the water main located above the sanitary, combined or storm sewer. [Drinking Water General Design Criteria IV.3.c]
T-39	At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. [Recommended Standards for Water Works 8.8.3.b]
T-40	There shall be no connection between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water or other contaminating materials may be discharged or drawn into the system. [Recommended Standards for Water Works 8.10.1]
T-41	Water utilities shall have a cross connection program conforming to 401 KAR 8. [Recommended Standards for Water Works 8.10.1]
T-42	Installed pipe shall be pressure tested and leakage tested in accordance with the appropriate AWWA Standards. [Recommended Standards for Water Works 8.7.6]

Distribution-Water Line Extension
Mortons Gap Water Dept
Facility Requirements

Activity ID No.: APE20140001

PORT0000000001 (continued):

Narrative Requirements:

Condition No.	Condition
T-43	New, cleaned and repaired water mains shall be disinfected in accordance with AWWA Standard C651. The specifications shall include detailed procedures for the adequate flushing, disinfection, and microbiological testing of all water mains. In an emergency or unusual situation, the disinfection procedure shall be discussed with the Division of Water. [Recommended Standards for Water Works 8.7.7]
T-44	A minimum cover of five feet shall be provided over pipe crossing underwater. [Recommended Standards for Water Works 8.9.2]
T-45	Valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair; the valves shall be easily accessible, and not subject to flooding for pipes crossing underwater. [Recommended Standards for Water Works 8.9.2.b]
T-46	Permanent taps or other provisions to allow insertion of a small meter to determine leakage and obtain water samples on each side of the valve closest to the supply source for pipes crossing. [Recommended Standards for Water Works 8.9.2.c]

N O T I C E

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
KENTUCKY DIVISION OF WATER

LETTER OF PERMISSION AUTHORIZATION AND
INDIVIDUAL WATER QUALITY CERTIFICATION

PROJECT: Reconstruction of the Morton's Gap Interchange (KY-813 / Breathitt Parkway)
Hopkins County, KY
KYTC Item No. 2-232.02 / 2-8633

The Section 404 and 401 activities for this project have been permitted under the authority of the Department of the Army "Letter of Permission" and by a Kentucky Division of Water "Individual Water Quality Certification". In order for the authorizations to be valid, the attached conditions must be followed. The contractor shall post a copy of the authorizations in a conspicuous location at the project site for the duration of construction and comply with all permit conditions as required.

To more readily expedite construction, the contractor may elect to alter the design or perform the work in a manner different from what was originally proposed and specified. Prior to commencing such alternative work, the contractor shall obtain **written** permission from the Division of Construction and the Corps of Engineers. A copy of any request to the Corps of Engineers to alter this proposal and subsequent responses shall be forwarded to the Division of Environmental Analysis, DA Permit Coordinator, for office records and for informational purposes.

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
REGULATORY BRANCH, WEST SECTION
6855 STATE ROUTE 66
NEWBURGH, INDIANA 47630

February 25, 2015

Operations Division
Regulatory Branch (West)
ID No. LRL-2014-888-jmb

Mr. John Purdy
Kentucky Transportation Cabinet
200 Mero Street
Division of Environmental Analysis, 5th Floor
Frankfort, Kentucky 40622

Dear Mr. Purdy:

This is in regard to your application for a Department of the Army (DA) permit dated October 30, 2014, concerning a plan to place fill material into 24 feet of perennial stream, 150 feet of ephemeral stream, 1.562 acres of emergent wetlands, and 0.753 acre of forested wetlands as a result of a roadway interchange reconstruction project located at the intersection of KY 813 and the Edward T. Breathitt (Pennyrile) Parkway. The interchange is being improved to meet current Interstate design standards, as this project is located within a section of the Parkway that the Kentucky Transportation Cabinet intends to upgrade and reclassify as I-69. We have reviewed your application and have made the following determinations: the work is minor in nature, will not have a significant impact on the environment, and should encounter no opposition.

Based on these determinations, your proposed work satisfies the Letter of Permission criteria, as specified in our regulations and the procedures outlined in the Letter of Permission No. LRL-2006-259-pgj, issued on October 3, 2007. Therefore, you may proceed with the work subject to the enclosed general conditions, and the following special conditions:

a. The project shall be constructed in accordance with the plans included in the Department of the Army permit application dated October 30, 2014;

b. The time limit for completing the work authorized ends 5 years from the date of this letter. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least 1 month before the expiration date;

c. The permittee shall provide to this office proof of payment from the Kentucky Department of Fish and Wildlife Resources (KDFWR) Stream and Wetland Mitigation Program for the purchase of 5.6 Adjusted Mitigation Units (AMU's). AMU's must be purchased prior to the discharge of fill into "waters of the United States". Inquiries regarding credit purchase may be

made directly to KDFWR by calling Mr. Clifford Scott (502) 564-5101, by email at: clifford.scott@ky.gov, or in writing at: Assistant Director, Division of Fisheries #1 Sportsman's Lane, Frankfort, Kentucky, 40601;

d. In order to address impacts to the federally listed Indiana bat (*Myotis sodalis*), the permittee shall adhere to the September 6, 2012 Indiana bat Programmatic Agreement between the Kentucky Transportation Cabinet, the Federal Highways Administration, and the United States Fish and Wildlife Service;

e. Upon completion of construction you are to notify the District Engineer. The enclosed Compliance Certification form must be completed and returned to this office.

This authorization will be effective as soon as we receive your signed acceptance of these conditions. Please sign and date the duplicate copy of this letter in the space provided and return the signed copy to our office. Please note that we perform periodic site inspections to ensure compliance with our permit conditions and appropriate Federal laws.

This letter contains a proffered permit for your proposed project. If you object to this decision, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this decision you must submit a completed RFA form to the Lakes and Rivers Division Office at the following address:

Regulatory Appeals Officer
U.S. Army Engineer Division
Great Lakes and Ohio River
550 Main Street - Room 10032
Cincinnati, Ohio 45202-3222
(513) 684-6212

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by April 27, 2015. It is not necessary to submit an RFA form to the Division office if you do not object to the decision in this letter.

A copy of this letter has been sent to the appropriate coordinating agencies.

If you have any questions, please contact this office by writing to the above address, ATTN: CELRL-OPF-W, or by calling Mr. Jarrod Bonnick at 812-842-0469. All correspondence pertaining to this matter should refer to our ID No. LRL-2014-888-jmb.

FOR THE DISTRICT ENGINEER:

Michael S. Ricketts
Chief, West Section
Regulatory Branch

(I accept the conditions of this authorization):

Kentucky Transportation Cabinet

3/4/15
Date

ADDRESS FOR COORDINATING AGENCIES

Mr. Virgil Lee Andrews Jr.
U.S. Fish & Wildlife Service
Kentucky Ecological Services Field Office
JC Watts Federal Building
330 West Broadway, Room 265
Frankfort, KY 40601

Ms. Chloe Brantly
Kentucky Division of Water
Water Quality Certification Section
200 Fair Oaks, 4th Floor
Frankfort, KY 40601

Mr. Craig Potts
Kentucky Heritage Council
300 Washington Street
Frankfort, KY 40601

Compliance Certification:

Permit Number: LRL-2014-888-jmb

Name of Permittee: Kentucky Transportation Cabinet

Date of Issuance: February 25, 2015

Upon completion of the activity authorized by this permit and any mitigation required by this permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers
CELRL-OPF-W
6855 State Route 66
Newburgh, IN 47630

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____
Signature of Permittee Date

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

January 8, 2015

Kentucky Transportation Cabinet
Attention: John Purdy
200 Mero Street
Division of Environmental Analysis, 5th Floor
Frankfort, Kentucky 40622

Re: Water Quality Certification #2015-002-7
KYTC Item No. 2-8633; KY-813/Breathitt Parkway
Interchange Reconstruction Project
USACE ID No.: LRL-2014-888-jmb
AI No.: 121320; Activity ID: APE20140002
Unnamed Tributaries and Wetland of Flat Creek
Hopkins County, Kentucky

Dear Mr. Purdy:

Pursuant to Section 401 of the Clean Water Act (CWA), the Commonwealth of Kentucky certifies it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA, will not be violated by the above referenced project provided that the U.S. Army Corps of Engineers authorizes the activity under 33 CFR part 330, and the attached conditions are met.

All future correspondence on this project must reference **AI No. 121320**. **The attached document is your official Water Quality Certification; please read it carefully**. If you should have any questions concerning the conditions of this water quality certification, please contact Chloe Brantley of my staff at Chloe.Brantley@ky.gov or calling (502) 564-3410 Extension 4863.

Sincerely,

Andrea Keatley, Acting Supervisor
Water Quality Certification Section
Kentucky Division of Water

AJ:CB
Attachments
cc: Jarrod Bonnick, USACE: Louisville District (via email: Jarrod.M.Bonnick@usace.army.mil)
Lee Andrews, USFWS: Frankfort (via email: teresa_hyatt@fws.gov)
John Purdy, KYTC DEA (via email: JPURDY@ky.gov)

Neil Guthals, Redwing Ecological Services, Inc. (via email: nguthals@redwingeco.com)
Richard Clausen, Redwing Ecological Services, Inc. (via email: rclausen@redwingeco.com)
Dale Reynolds, KDOW: Green River Basin Coordinator (via email: dale.reynolds@ky.gov)

KTC Water Quality Certification

Edward T Breathitt Pkwy (Pennyrile Pkwy) - Hopkins Co
Facility Requirements
Permit Number:2014-002-7
Activity ID No.: APE20140002

ACTV0000000002 (Unnamed Tributaries and Wetlands of Flat Creek) KYTC Item Number: 2-8633- KY 813 & Breathitt (Pennyrile) Parkway Interchange Reconstruction Project:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Kentucky Transportation Cabinet shall submit notification: Due prior to any construction activity to the Kentucky Division of Water, 401 Water Quality Certification Section Project Manager or Supervisor. [Clean Water Act]
S-2	Kentucky Transportation Cabinet shall submit notification: Due when construction is complete to the Kentucky Division of Water, 401 Water Quality Certification Section Project Manager of Supervisor. [Clean Water Act]
S-3	A copy of the in-lieu fee receipt paid to Kentucky Department of Fish & Wildlife Resources, Wetland and Stream Mitigation Program must be submitted to the Water Quality Certification Section before the beginning of proposed project activities. For proposed project activities authorized under the Corps Section 404 permit, a total of 5.556 wetland Adjusted Mitigation Units (AMUs) have been calculated as compensatory mitigation for the proposed project. [Clean Water Act]

Narrative Requirements:

Condition No.	Condition
T-1	The work approved by this certification shall be limited to the proposed Kentucky Transportation Cabinet (KYTC Item Number : 2-8633) project that involves the reconstruction of an existing interchange of KY-813 and Breathitt (Pennyrile) Parkway at Morton's Gap in Hopkins County, Kentucky. The four ramps will be constructed in a stnadard "diamond" configuration. Proposed impacts to streams and wetlands from operations and activities such as filling, draining, grading, installation of pier support, and extension of an existing double concrete box culvert include the following: - 150 linear feet of an ephemeral, unnamed tributary to Flat Creek - 24 linear feet of a perenial, unnamed tributaries to Flat Creek - 1.832 acres of palustrine emergent welands of Flat Creek - .0.483 acre of palustrine forested welands of Flat Creek . [Clean Water Act]

KTC Water Quality Certification
Edward T Breathitt Pkwy (Pennyrile Pkwy) - Hopkins Co
Facility Requirements
Permit Number:2014-002-7
Activity ID No.: APE20140002

ACTV0000000002 (continued):

Narrative Requirements:

Condition No.	Condition
T-2	All work performed under this certification shall adhere to the design and specifications set forth in the 401 Water Quality Certification Application received November 05, 2014 by the Kentucky Division of Wate, documentation from the consultant and a field inspection conducted December 12, 2014. [Clean Water Act]
T-3	Kentucky Transportation Cabinet is responsible for preventing degradation of waters of the Commonwealth from soil erosion. An erosion and sedimentation control plan must be designed, implemented, and maintained in effective operating condition at all times during construction. [Clean Water Act]
T-4	The Division of Water reserves the right to modify or revoke this certification should it be determined that the activity is in noncompliance with any condition set forth in this certification. [Clean Water Act]
T-5	If construction does not commence within one year of the date of this letter, this certification will become void. A letter requesting a renewal should be submitted. [Clean Water Act]
T-6	Other permits from the Division of Water may be required for this activity. If this activity occurs within a floodplain, a Permit to Construct Across or Along a Stream may be required. Please contact Todd Powers (502-564-3410) for more information. If the project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a Kentucky Pollution Discharge Elimination System (KPDES) stormwater permit shall be required from the Surface Water Permits Branch. This permit requires the development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include erosion prevention and sediment control measures. Contact: Surface Water Permits Branch (SWPB) Support (502-564-3410 or SWPBSupport@ky.gov). [Clean Water Act]
T-7	Dredging work shall not be conducted during the fish spawning season, April 15th through June 15th. [Clean Water Act]
T-8	Mitigation for impacts shall begin prior to or concurrently with impacts. [Clean Water Act]
T-9	Check dams are not allowed within the stream channel. [Clean Water Act]
T-10	Remove all sediment and erosion control measures after re-vegetation has become well-established. [Clean Water Act]

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

ATTENTION APPLICANT

If your project involves one or more of the following activities, you may need more than one permit from the Kentucky Division of Water.

***building in a floodplain *road culvert in a stream**
***streambank stabilization *stream cleanout**
***utility line crossing a stream**
***construction sites greater than 1 acre**

- **Construction sites greater than 1 acre will require the filing of a Notice of Intent to be covered under the KPDES General Stormwater Permit. This permit requires the creation of an erosion control plan.**
  Contact: Surface Water Permits Branch (SWPB) Support at (502) 564-3410 or SWPBSupport@ky.gov

- **Projects that involve filling in the floodplain will require a floodplain construction permit from the Water Resources Branch.**
  Contact: Todd Powers

- **Projects that involve work IN a stream, such as bank stabilization, road culverts, utility line crossings, and stream alteration will require a floodplain permit and a Water Quality Certification from the Division of Water.**
  Contact: Adam Jackson

All three contacts listed above can be reached at (502) 564-3410. A complete listing of environmental programs administered by the Kentucky Department for Environmental Protection is available from Pete Goodmann by calling (502) 564-3410.

GENERAL CONDITIONS FOR WATER QUALITY CERTIFICATION

1. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.

2. All dredged material shall be removed to an upland location and/or graded on adjacent areas (so long as such areas are not regulated wetlands), to obtain original streamside elevations, i.e. overbank flooding shall not be artificially obstructed.

3. In areas not riprapped or other wise stabilized, revegetation of stream banks and riparian zones shall occur concurrently with project progression. At a minimum, revegetation will approximate pre-disturbance conditions.

4. To the maximum extent practicable, all instream work under this certification shall be performed during low flow.

5. Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances where such instream work is unavoidable, then it shall be performed in such a manner and duration as to minimize resuspension of sediments and disturbance to substrates and bank or riparian vegetation.

6. Any fill or riprap including refuse fill, shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If riprap is utilized, it is to be of such weight and size that bank stress or slump conditions will not be created because of its placement.

7. If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when work will be done.

8. Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.

9. Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/564-2380.

SPECIAL NOTE FOR EROSION CONTROL

I. DESCRIPTION

Perform all erosion and water pollution control work in accordance with the Department's 2008 Standard Specifications, these notes, and interim Supplemental Specifications, Special Provisions and Special Notes, and Standard and Sepia Drawings, current editions, and as directed by the Engineer. Section references are to the Standard Specifications. This work shall consist of:

(1) Developing and preparing a Best Management Practices Plan (BMP) tailored to suit the specific construction phasing for each site within the project; (2) Preparing the project site for construction, including locating, furnishing, installing, and maintaining temporary and/or permanent erosion and water pollution control measures as required by the BMP prior to beginning any earth disturbing activity on the project site; (3) Clearing and grubbing and removal of all obstructions as required for construction; (4) Removing all erosion control devices when no longer needed; (5) Restoring all disturbed areas as nearly as possible to their original condition; (6) Preparing seedbeds and permanently seeding all disturbed areas; (7) Providing a Kentucky Erosion Prevention and Sediment Control Program (KEPSC) qualified inspector; and (8) Performing any other work to prevent erosion and/or water pollution as specified by this contract, required by the BMP, or as directed by the Engineer.

II. MATERIALS

Furnish materials in accordance with these notes, the Standard Specifications and interim Supplemental Specifications, and applicable Special Provisions and Special Notes, and Standard and Sepia Drawings, current editions. Provide for all materials to be sampled and tested in accordance with the Department's Sampling Manual. Unless directed otherwise by the Engineer, make the materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing.

III. CONSTRUCTION

Be advised, these Erosion Control Plan Notes do not constitute a BMP plan for the project. Jointly with the Engineer, prepare a site specific BMP plan for each drainage area within the project in accordance with Section 213 and the supplemental specifications. Provide a unique BMP at each project site using good engineering practices taking into account existing site conditions, the type of work to be performed, and the construction phasing, methods and techniques to be utilized to complete the work. Be responsible for all erosion prevention, sediment control, and water pollution prevention measures required by the BMP for each site. Represent and warrant compliance with the Clean Water Act (33 USC Section 1251 et seq.), the 404 Permit, the 401 Water Quality

Certification, and applicable state and local government agency laws, regulations, rules, specifications, and permits. Contrary to Section 105.05, in case of discrepancy between theses notes, the Standard Specifications, interim Supplemental Specifications, Special and Special Notes, Standard and Sepia Drawings, and such state and local government agency requirements, adhere to the most restrictive requirement.

Conduct operations in such a manner as to minimize the amount of disturbed ground during each phase of the construction and limit the haul roads to the minimum required to perform the work.. Preserve existing vegetation not required to be removed by the work or the contract. Seed and/or mulch disturbed areas at the earliest opportunity. Use silt fence, silt traps, temporary ditches, brush barriers, erosion control blankets, sodding, channel lining, and other erosion control measures in a timely manner as required by the BMP and as directed or approved by the Engineer. Prevent sediment laden water from leaving the project, entering an existing drainage structure, or entering a steam.

Provide for erosion control measures to be in place and functioning prior to any earth disturbance within a drainage area. Compute the volume and size of silt control devices necessary to control sediment during each phase of construction. Remove sediment from silt traps before they become a maximum of ½ full. Maintain silt fence by removing accumulated trappings and/or replacing the geotextile fabric when it becomes clogged, damaged, or deteriorated, or when directed by the Engineer. Properly dispose of all materials trapped by erosion control devices at approved sites off the right of way obtained by the Contractor at no additional cost to the Department (See Special Note for Waste and Borrow).

As work progresses, add or remove erosion control measures as required by the BMP applicable to the Contractor’s project phasing and construction methods and techniques. Update the volume calculations and modify the BMP as necessary throughout the duration of the project. Ensure that an updated BMP is kept on site and available for public inspection throughout the life of the project.

After all construction is complete, restore all disturbed areas in accordance with Section 212. completely remove all temporary erosion control devices not required as part of the permanent erosion control from the construction site. Prior to removal, obtain the Engineer’s concurrence of items to be removed. Grade the remaining exposed earth (both on and off the Right of-Way) as nearly as possible to its original condition, or as directed by the Engineer. Prepare the seed bed areas and sow all exposed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.

IV. MEASUREMENT

Erosion Control Blanket. If required by the BMP, the Department will measure Erosion Control Blanket according to Section 212.04.07.

Sodding. If required by the BMP, the Department will measure Sodding according to Section 212.04.08.

Channel Lining. If required by the BMP, the Department will measure Channel Lining according to Sections 703.04.04-703.04.07.

Erosion Control. Contrary to Sections 212.04 and 213.04, other than Erosion Control Blankets, Sodding, and Channel Lining, the Department will measure Erosion Control as one lump sum. The Department will not measure developing, updating, and maintaining a BMP plan for each site; providing a KEPSC qualified inspector; locating, furnishing, installing, inspecting, maintaining, and removing erosion and water pollution control items; Roadway Excavation, Borrow Excavation, Embankment In Place, Topsoil Furnished and Placed, and Spreading Stockpiled Topsoil; Topdressing Fertilizer, Temporary and Permanent Seeding and Protection, Special Seeding Crown Vetch, and Temporary Mulch; Sedimentation Basin and Clean Sedimentation Basin, Silt Trap Type "A" and Clean Silt Trap Type "A"; Silt Trap Type "B" and Clean Silt Trap Type "B"; Silt Trap Type "C" and Clean Silt Trap Type "C"; Temporary Silt Fence and Clean Temporary Silt Fence; Plants, Vines, Shrubs, and Trees; Gabion and Dumped Stone Deflectors and Riffle Structures; Boulders; and Temporary Ditches and clean Temporary Ditches; and all other erosion and water pollution control items required by the BMP or the Engineer, but shall be incidental to Erosion Control.

V. Basis of Payment

Erosion Control Blanket. If not listed as a bid item, but required by the BMP, the Department will pay for Erosion Control Blankets as Extra Work according to Sections 104.03 and 109.04.

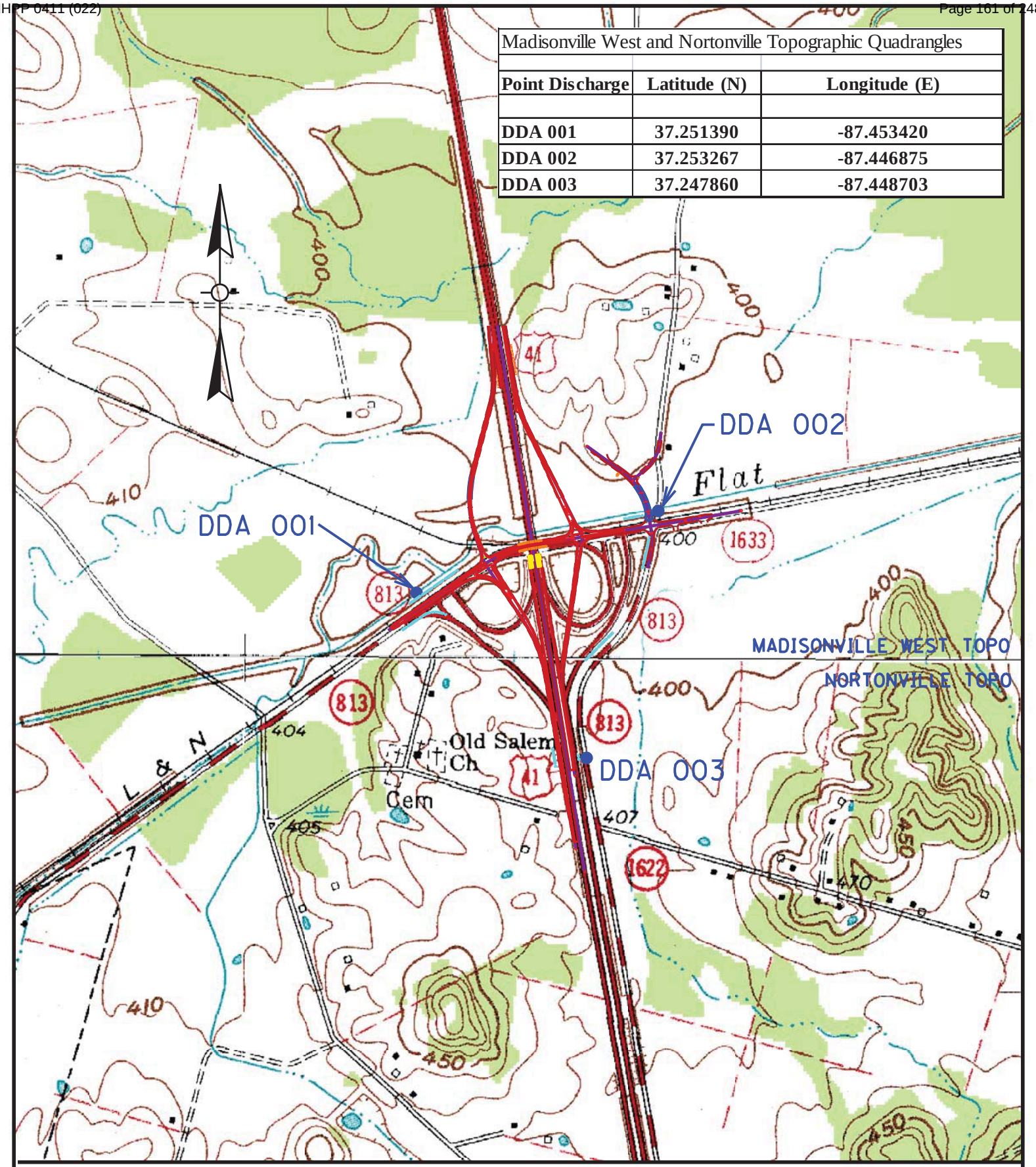
Sodding. If not listed as a bid item, but required by the BMP, the Department will pay for Sodding as Extra Work according to Sections 104.03 and 109.04.

Channel Lining. If not listed as a bid item, but required by the BMP, the Department will pay for Channel Lining as Extra Work according to Sections 104.03 and 109.04.

Erosion Control. Contrary to Sections 212.05 and 213.05, other than Erosion Control Blanket, Sodding, and Channel Lining, payment at the Contract lump sum price for Erosion Control, shall be full compensation for all materials, equipment, labor and incidentals necessary to complete the erosion and water pollution control work as specified in these notes, Sections 212 and 213, the Supplemental Specifications, applicable Special Provisions and Special Notes, and Standard and Sepia Drawings, including but not limited to developing, updating, and maintaining a BMP plan for each site; providing a KEPSC qualified inspector; locating, furnishing, installing, inspecting, maintaining, and removing erosion and water pollution control items; Roadway Excavation, Borrow Excavation, Embankment In Place, Topsoil Furnished and Placed, and Spreading Stockpiled Topsoil; Topdressing Fertilizer, Temporary and Permanent Seeding and Protection, Special Seeding Crown Vetch, and Temporary Mulch; Sedimentation Basin and Clean Sedimentation Basin, Silt Trap Type “A” and Clean Silt Trap Type “A”; Silt Trap Type “B” and Clean Silt Trap Type “B”; Silt Trap Type “C” and Clean Silt Trap Type “C”; Temporary Silt Fence and Clean Temporary Silt Fence; Plants, Vines, Shrubs, and Trees; Gabion and Dumped Stone Deflectors and Riffle Structures; Boulders; and Temporary Ditches and clean Temporary Ditches; and all other erosion and water pollution control items required by the BMP or the Engineer

2-232.02 Hopkins County

NOI password: 74ab5e48-8c7c-4a77-826a-dbeef307a4f1



NOISW PERMIT MAP
ITEM NO. 2-232.02
MORTONS GAP INTERCHANGE
PENNYRILE PARKWAY - KY 812
SCALE 1" = 1000'

Item No. 2 - 232.02 **Project Mgr.**

County HOPKINS **Route** EB-9004

CAP #	Date of Promise	Promise made to:	Location of Promise
1	03-APR-15	J Rudd	Parcel 14

CAP Description

ELECTRIC & WATER SERVICE WILL BE DISCONNECTED FROM THE BUILDING ON PARCEL 14, BY KYTC, PRIOR TO THE START OF CONSTRUCTION.

2	03-APR-15	J Rudd	Parcel 14

CAP Description

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF THE BUILDING ON PARCEL 14.

3	03-APR-15	J Rudd	Parcel 14

CAP Description

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PUMPING, AND REMOVAL OR CRUSH & FILL OF THE SEPTIC SYSTEM ON PARCEL 14.

4	06-MAY-15	J Rudd	Parcel 19

CAP Description

THE TWO (2) IDENTIFICATION SIGNS (BEING FOR THE MOTEL AND PILOT TRAVEL CENTER AT THE INTERSECTION OF CR 1152 AND KY 813) AND ONE (1) BILLBOARD, LOCATED ON PARCEL 19, ARE WITHIN THE DISTURB LIMITS OF THIS PROJECT AND SHALL BE REMOVED BY THE CONTRACTOR. THIS REMOVAL WILL BE INCIDENTAL TO CLEARING AND GRUBBING. THE SIGNS AND BILLBOARD SHALL BECOME PROPERTY OF THE CONTRACTOR. ELECTRIC SERVICE TO THE SIGNS AND BILLBOARD WILL BE DISCONNECTED BY KYTC, PRIOR TO CONSTRUCTION.

5	06-MAY-16	J Rudd	Parcel 29

CAP Description

THE BILLBOARD LOCATED ON PARCEL 29, IS WITHIN THE DISTURB LIMITS OF THIS PROJECT AND SHALL BE REMOVED BY THE CONTRACTOR. THIS REMOVAL WILL BE INCIDENTAL TO CLEARING AND GRUBBING. THE BILLBOARD SHALL BECOME PROPERTY OF THE CONTRACTOR. ELECTRIC SERVICE TO THE BILLBOARD WILL BE DISCONNECTED BY KYTC, PRIOR TO CONSTRUCTION.

PART II

SPECIFICATIONS AND STANDARD DRAWINGS

SPECIFICATIONS REFERENCE

Any reference in the plans or proposal to previous editions of the *Standard Specifications for Road and Bridge Construction* and *Standard Drawings* are superseded by *Standard Specifications for Road and Bridge Construction, Edition of 2012* and *Standard Drawings, Edition of 2012 with the 2012 Revision.*

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

Subsection:	102.15 Process Agent.
Revision:	Replace the 1st paragraph with the following: Every corporation doing business with the Department shall submit evidence of compliance with KRS Sections 14A.4-010, 271B.11-010, 271B.11-070, 271B.11-080, 271B.5-010 and 271B.16-220, and file with the Department the name and address of the process agent upon whom process may be served.
Subsection:	105.13 Claims Resolution Process.
Revision:	Delete all references to TC 63-34 and TC 63-44 from the subsection as these forms are no longer available through the forms library and are forms generated within the AASHTO SiteManager software.
Subsection:	108.03 Preconstruction Conference.
Revision:	Replace 8) Staking with the following: 8) Staking (designated by a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
Subsection:	109.07.02 Fuel.
Revision:	Revise item Crushed Aggregate Used for Embankment Stabilization to the following: Crushed Aggregate Used for Stabilization of Unsuitable Materials Used for Embankment Stabilization
	Delete the following item from the table. ~~Crushed Sandstone Base (Cement Treated)~~
Subsection:	110.02 Demobilization.
Revision:	Replace the first part of the first sentence of the second paragraph with the following: Perform all work and operations necessary to accomplish final clean-up as specified in the first paragraph of Subsection 105.12;
Subsection:	112.03.12 Project Traffic Coordinator (PTC).
Revision:	Replace the last paragraph of this subsection with the following: Ensure the designated PTC has sufficient skill and experience to properly perform the task assigned and has successfully completed the qualification courses.
Subsection:	112.04.18 Diversions (By-Pass Detours).
Revision:	Insert the following sentence after the 2nd sentence of this subsection. The Department will not measure temporary drainage structures for payment when the contract documents provide the required drainage opening that must be maintained with the diversion. The temporary drainage structures shall be incidental to the construction of the diversion. If the contract documents fail to provide the required drainage opening needed for the diversion, the cost of the temporary drainage structure will be handled as extra work in accordance with section 109.04.
Subsection:	201.03.01 Contractor Staking.
Revision:	Replace the first paragraph with the following: Perform all necessary surveying under the general supervision of a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

Subsection:	201.04.01 Contractor Staking.
Revision:	Replace the last sentence of the paragraph with the following: Complete the general layout of the project under the supervision of a Professional Engineer or Land Surveyor licensed in the Commonwealth of Kentucky.
Subsection:	206.04.01 Embankment-in-Place.
Revision:	Replace the fourth paragraph with the following: The Department will not measure **suitable** excavation included in the original plans that is disposed of for payment and will consider it incidental to Embankment-in-Place.
Subsection:	208.02.01 Cement.
Revision:	Replace paragraph with the following: Select Type I or Type II cement conforming to Section 801. Use the same type cement throughout the work.
Subsection:	208.03.06 Curing and Protection.
Revision:	Replace the fourth paragraph with the following: Do not allow traffic or equipment on the finished surface until the stabilized subgrade has cured for a total of 7-days with an ambient air temperature above 40 degrees Fahrenheit. A curing day consists of a continuous 24-hour period in which the ambient air temperature does not fall below 40 degrees Fahrenheit. Curing days will not be calculated consecutively, but must total seven (7) , 24-hour days with the ambient air temperature remaining at or above 40 degrees Fahrenheit before traffic or equipment will be allowed to traverse the stabilized subgrade. The Department may allow a shortened curing period when the Contractor requests. The Contractor shall give the Department at least 3 day notice of the request for a shortened curing period. The Department will require a minimum of 3 curing days after final compaction. The Contractor shall furnish cores to the treated depth of the roadbed at 500 feet intervals for each lane when a shortened curing time is requested. The Department will test cores using an unconfined compression test. Roadbed cores must achieve a minimum strength requirement of 80 psi.
Subsection:	208.03.06 Curing and Protection.
Revision:	Replace paragraph eight with the following: At no expense to the Department, repair any damage to the subgrade caused by freezing.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	A) Seed Mixtures for Permanent Seeding.
Revision:	Revise **Seed Mix Type I** to the mixture shown below: 50% Kentucky 31 Tall Fescue (Festuca arundinacea) 35% Hard Fescue (Festuca (Festuca longifolia) 10% Ryegrass, Perennial (Lolium perenne) 5% White Dutch Clover (Trifolium repens)
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	A) Seed Mixtures for Permanent Seeding.
Number:	2)
Revision:	Replace the paragraph with the following: Permanent Seeding on Slopes Greater than 3:1 in Highway Districts 4, 5, 6, and 7. Apply seed mix Type II at a minimum application rate of 100 pounds per acre. If adjacent to a golf course replace the crown vetch with Kentucky 31 Tall Fescue.

Supplemental Specifications to the
Standard Specifications for Road and Bridge Construction, 2012 Edition
Effective with the August 22, 2014 Letting

Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	A) Seed Mixtures for Permanent Seeding.
Number:	3)
Revision:	Replace the paragraph with the following: Permanent Seeding on Slopes Greater than 3:1 in Highway Districts 1, 2, 3, 8, 9, 10, 11, and 12. Apply seed mix Type III at a minimum application rate of 100 pounds per acre. If adjacent to crop land or golf course, replace the Sericea Lespedeza with Kentucky 31 Fescue.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	B) Procedures for Permanent Seeding.
Revision:	Delete the first sentence of the section.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	B) Procedures for Permanent Seeding.
Revision:	Replace the second and third sentence of the section with the following: Prepare a seedbed and apply an initial fertilizer that contains a minimum of 100 pounds of nitrogen, 100 pounds of phosphate, and 100 pounds of potash per acre. Apply agricultural limestone to the seedbed when the Engineer determines it is needed. When required, place agricultural limestone at a rate of 3 tons per acre.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	D) Top Dressing.
Revision:	Change the title of part to D) Fertilizer.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	D) Fertilizer.
Revision:	Replace the first paragraph with the following: Apply fertilizer at the beginning of the seeding operation and after vegetation is established. Use fertilizer delivered to the project in bags or bulk. Apply initial fertilizer to all areas prior to the seeding or sodding operation at the application rate specified in 212.03.03 B). Apply 20-10-10 fertilizer to the areas after vegetation has been established at a rate of 11.5 pounds per 1,000 square feet. Obtain approval from the Engineer prior to the 2nd fertilizer application. Reapply fertilizer to any area that has a streaked appearance. The reapplication shall be at no additional cost to the Department. Re-establish any vegetation severely damaged or destroyed because of an excessive application of fertilizer at no cost to the Department.
Subsection:	212.03.03 Permanent Seeding and Protection.
Part:	D) Fertilizer.
Revision:	Delete the second paragraph.
Subsection:	212.04.04 Agricultural Limestone.
Revision:	Replace the entire section with the following: The Department will measure the quantity of agricultural limestone in tons.
Subsection:	212.04.05 Fertilizer.
Revision:	Replace the entire section with the following: The Department will measure fertilizer used in the seeding or sodding operations for payment. The Department will measure the quantity by tons.

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Subsection:	212.05 PAYMENT.
Revision:	Delete the following item code:
	Code Pay Item Pay Unit
	05966 Topdressing Fertilizer Ton
Subsection:	212.05 PAYMENT.
Revision:	Add the following pay items:
	Code Pay Item Pay Unit
	05963 Initial Fertilizer Ton
	05964 20-10-10 Fertilizer Ton
	05992 Agricultural Limestone Ton
Subsection:	213.03.02 Progress Requirements.
Revision:	Replace the last sentence of the third paragraph with the following:
	Additionally, the Department will apply a penalty equal to the liquidated damages when all aspects of the work are not coordinated in an acceptable manner within 7 calendar days after written notification.
Subsection:	213.03.05 Temporary Control Measures.
Part:	E) Temporary Seeding and Protection.
Revision:	Delete the second sentence of the first paragraph.
Subsection:	304.02.01 Physical Properties.
Table:	Required Geogrid Properties
Revision:	Replace all references to Test Method "GRI-GG2-87" with ASTM D 7737.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	B) Sampling.
Revision:	Replace the second sentence with the following:
	The Department will determine when to obtain the quality control samples using the random-number feature of the mix design submittal and approval spreadsheet. The Department will randomly determine when to obtain the verification samples required in Subsections 402.03.03 and 402.03.04 using the Asphalt Mixture Sample Random Tonnage Generator.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	D) Testing Responsibilities.
Number:	3) VMA.
Revision:	Add the following paragraph below Number 3) VMA:
	Retain the AV/VMA specimens and one additional corresponding G_{mm} sample for 5 working days for mixture verification testing by the Department. For Specialty Mixtures, retain a mixture sample for 5 working days for mixture verification testing by the Department. When the Department's test results do not verify that the Contractor's quality control test results are within the acceptable tolerances according to Subsection 402.03.03, retain the samples and specimens from the affected sublot(s) for the duration of the project.
Subsection:	402.03.02 Contractor Quality Control and Department Acceptance.
Part:	D) Testing Responsibilities.
Number:	4) Density.
Revision:	Replace the second sentence of the Option A paragraph with the following:
	Perform coring by the end of the following work day.

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Subsection: **Part:** **Number:** **Revision:**	402.03.02 Contractor Quality Control and Department Acceptance. D) Testing Responsibilities. 5) Gradation. Delete the second paragraph.
Subsection: **Part:** **Number:** **Revision:**	402.03.02 Contractor Quality Control and Department Acceptance. H) Unsatisfactory Work. 1) Based on Lab Data. Replace the second paragraph with the following: When the Engineer determines that safety concerns or other considerations prohibit an immediate shutdown, continue work and the Department will make an evaluation of acceptability according to Subsection 402.03.05.
Subsection: **Revision:**	402.03.03 Verification. Replace the first paragraph with the following: **402.03.03 Mixture Verification.** For volumetric properties, the Department will perform a minimum of one verification test for AC, AV, and VMA according to the corresponding procedures as given in Subsection 402.03.02. The Department will randomly determine when to obtain the verification sample using the Asphalt Mixture Sample Random Tonnage Generator. For specialty mixtures, the Department will perform one AC and one gradation determination per lot according to the corresponding procedures as given in Subsection 402.03.02. However, Department personnel will not perform AC determinations according to KM 64-405. The Contractor will obtain a quality control sample at the same time the Department obtains the mixture verification sample and perform testing according to the procedures given in Subsection 402.03.02. If the Contractor's quality control sample is verified by the Department's test results within the tolerances provided below, the Contractor's sample will serve as the quality control sample for the affected sublot. The Department may perform the mixture verification test on the Contractor's equipment or on the Department's equipment.
Subsection: **Part:** **Revision:**	402.03.03 Verification. A) Evaluation of Sublot(s) Verified by Department. Replace the third sentence of the second paragraph with the following: When the paired *t* -test indicates that the Contractor's data and Department's data are possibly not from the same population, the Department will investigate the cause for the difference according to Subsection 402.03.05 and implement corrective measures as the Engineer deems appropriate.
Subsection: **Part:** **Revision:**	402.03.03 Verification. B) Evaluation of Sublots Not Verified by Department. Replace the third sentence of the first paragraph with the following: When differences between test results are not within the tolerances listed below, the Department will resolve the discrepancy according to Subsection 402.03.05.

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Subsection: **Part:** **Revision:**	402.03.03 Verification. B) Evaluation of Sublots Not Verified by Department. Replace the third sentence of the second paragraph with the following: When the *F* -test or *t* -test indicates that the Contractor's data and Department's data are possibly not from the same population, the Department will investigate the cause for the difference according to Subsection 402.03.05 and implement corrective measures as the Engineer deems appropriate.
Subsection: **Part:** **Revision:**	402.03.03 Verification. C) Test Data Patterns. Replace the second sentence with the following: When patterns indicate substantial differences between the verified and non-verified sublots, the Department will perform further comparative testing according to subsection 402.03.05.
Subsection: **Revision:**	402.03 CONSTRUCTION. Add the following subsection: **402.03.04 Testing Equipment and Technician Verification.** For mixtures with a minimum quantity of 20,000 tons and for every 20,000 tons thereafter, the Department will obtain an additional verification sample at random using the Asphalt Mixture Sample Random Tonnage Generator in order to verify the integrity of the Contractor's and Department's laboratory testing equipment and technicians. The Department will obtain a mixture sample of at least 150 lb at the asphalt mixing plant according to KM 64-425 and split it according to AASHTO R 47. The Department will retain one split portion of the sample and provide the other portion to the Contractor. At a later time convenient to both parties, the Department and Contractor will simultaneously reheat the sample to the specified compaction temperature and test the mixture for AV and VMA using separate laboratory equipment according to the corresponding procedures given in Subsection 402.03.02. The Department will evaluate the differences in test results between the two laboratories. When the difference between the results for AV or VMA is not within ± 2.0 percent, the Department will investigate and resolve the discrepancy according to Subsection 402.03.05.
Subsection: **Revision:**	402.03.04 Dispute Resolution. Change the subsection number to 402.03.05.
Subsection: **Part:** **Table:** **Revision:**	402.05 PAYMENT. Lot Pay Adjustment Schedule Compaction Option A Base and Binder Mixtures AC Replace the Deviation from JMF(%) that corresponds to a Pay Value of 0.95 to ±0.6.
Subsection: **Revision:**	403.02.10 Material Transfer Vehicle (MTV). Replace the first sentence with the following: In addition to the equipment specified above, provide a MTV with the following minimum characteristics:
Subsection: **Revision:**	412.02.09 Material Transfer Vehicle (MTV). Replace the paragraph with the following: Provide and utilize a MTV with the minimum characteristics outlined in section 403.02.10.

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Subsection: **Revision:**	412.03.07 Placement and Compaction. Replace the first paragraph with the following: Use a MTV when placing SMA mixture in the driving lanes. The MTV is not required on ramps and/or shoulders unless specified in the contract. When the Engineer determines the use of the MTV is not practical for a portion of the project, the Engineer may waive its requirement for that portion of pavement by a letter documenting the waiver.
Subsection: **Revision:**	412.04 MEASUREMENT. Add the following subsection: 412.04.03. Material Transfer Vehicle (MTV). The Department will not measure the MTV for payment and will consider its use incidental to the asphalt mixture.
Subsection: **Part:** **Revision:**	501.03.19 Surface Tolerances and Testing Surface. B) Ride Quality. Add the following to the end of the first paragraph: The Department will specify if the ride quality requirements are Category A or Category B when ride quality is specified in the Contract. Category B ride quality requirements shall apply when the Department fails to classify which ride quality requirement will apply to the Contract.
Subsection: **Revision:**	603.03.06 Cofferdams. Replace the seventh sentence of paragraph one with the following: Submit drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection: **Revision:**	605.03.04 Tack Welding. Insert the subsection and the following: 605.03.04 Tack Welding. The Department does not allow tack welding.
Subsection: **Part:** **Number:** **Revision:**	606.03.17 Special Requirements for Latex Concrete Overlays. A) Existing Bridges and New Structures. 1) Prewetting and Grout-Bond Coat. Add the following sentence to the last paragraph: Do not apply a grout-bond coat on bridge decks prepared by hydrodemolition.
Subsection: **Revision:**	609.03 Construction. Replace Subsection 609.03.01 with the following: 609.03.01 A) Swinging the Spans. Before placing concrete slabs on steel spans or precast concrete release the temporary erection supports under the bridge and swing the span free on its supports. 609.03.01 B) Lift Loops. Cut all lift loops flush with the top of the precast beam once the beam is placed in the final location and prior to placing steel reinforcement. At locations where lift loops are cut, paint the top of the beam with galvanized or epoxy paint.
Subsection: **Revision:**	611.03.02 Precast Unit Construction. Replace the first sentence of the subsection with the following: Construct units according to ASTM C1577, **replacing Table 1 (Design Requirements for Precast Concrete Box Sections Under Earth, Dead and HL-93 Live Load Conditions) with KY Table 1 (Precast Culvert KYHL-93 Design Table)**, and Section 605 with the following exceptions and additions:

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Subsection: **Number:** **Revision:**	613.03.01 Design. 2) Replace "AASHTO Standard Specifications for Highway Bridges" with "AASHTO LRFD Bridge Design Specifications"
Subsection: **Revision:**	615.06.02 Add the following sentence to the end of the subsection. The ends of units shall be normal to walls and centerline except exposed edges shall be beveled ¾ inch.
Subsection: **Revision:**	615.06.03 Placement of Reinforcement in Precast 3-Sided Units. Replace the reference of 6.6 in the section to 615.06.06.
Subsection: **Revision:**	615.06.04 Placement of Reinforcement for Precast Endwalls. Replace the reference of 6.7 in the section to 615.06.07.
Subsection: **Revision:**	615.06.06 Laps, Welds, and Spacing for Precast 3-Sided Units. Replace the subsection with the following: Tension splices in the circumferential reinforcement shall be made by lapping. Laps may not be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.2 and AASHTO 2012 Bridge Design Guide Section 5.11.6.3. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.1 and AASHTO 2012 Bridge Design Guide Section 5.11.6.2. The overlap of welded wire fabric shall be measured between the outer most longitudinal wires of each fabric sheet. For deformed billet-steel bars, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.1. For splices other than tension splices, the overlap shall be a minimum of 12" for welded wire fabric or deformed billet-steel bars. The spacing center to center of the circumferential wires in a wire fabric sheet shall be no less than 2 inches and no more than 4 inches. The spacing center to center of the longitudinal wires shall not be more than 8 inches. The spacing center to center of the longitudinal distribution steel for either line of reinforcing in the top slab shall be not more than 16 inches.
Subsection: **Revision:**	615.06.07 Laps, Welds, and Spacing for Precast Endwalls. Replace the subsection with the following: Splices in the reinforcement shall be made by lapping. Laps may not be tack welded together for assembly purposes. For smooth welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.2 and AASHTO 2012 Bridge Design Guide Section 5.11.6.3. For deformed welded wire fabric, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.5.1 and AASHTO 2012 Bridge Design Guide Section 5.11.6.2. For deformed billet-steel bars, the overlap shall meet the requirements of AASHTO 2012 Bridge Design Guide Section 5.11.2.1. The spacing center-to-center of the wire fabric sheet shall not be less than 2 inches or more than 8 inches.

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Subsection:	615.08.01 Type of Test Specimen.
Revision:	Replace the subsection with the following: Start-up slump, air content, unit weight, and temperature tests will be performed each day on the first batch of concrete. Acceptable start-up results are required for production of the first unit. After the first unit has been established, random acceptance testing is performed daily for each 50 yd^3 (or fraction thereof). In addition to the slump, air content, unit weight, and temperature tests, a minimum of one set of cylinders shall be required each time plastic property testing is performed.
Subsection:	615.08.02 Compression Testing.
Revision:	Delete the second sentence.
Subsection:	615.08.04 Acceptability of Core Tests.
Revision:	Delete the entire subsection.
Subsection:	615.12 Inspection.
Revision:	Add the following sentences to the end of the subsection: Units will arrive at jobsite with the "Kentucky Oval" stamped on the unit which is an indication of acceptable inspection at the production facility. Units shall be inspected upon arrival for any evidence of damage resulting from transport to the jobsite.
Subsection:	716.02.02 Paint.
Revision:	Replace sentence with the following: Conform to Section 821.
Subsection:	716.03 CONSTRUCTION.
Revision:	Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,
Subsection:	716.03.02 Lighting Standard Installation.
Revision:	Replace the second sentence with the following: Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	A) Conventional Installation.
Revision:	Replace the third sentence with the following: Orient the transformer base so the door is positioned on the side away from on-coming traffic.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	A) Conventional Installation.
Number:	1) Breakaway Installation and Requirements.
Revision:	Replace the first sentence with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	B) High Mast Installation
Revision:	Replace the first sentence with the following: Install each high mast pole as noted on plans.
Subsection:	716.03.02 Lighting Standard Installation.
Part:	B) High Mast Installation
Number:	2) Concrete Base Installation
Revision:	Modification of Chart and succeeding paragraphs within this section:

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	<table><tr><td colspan="8">Drilled Shaft Depth Data</td></tr><tr><td colspan="2">Level Ground</td><td colspan="2">3:1 Ground Slope</td><td colspan="2">2:1 Ground Slope</td><td colspan="2">1.5:1 Ground Slope (2)</td></tr><tr><td>Soil</td><td>Rock</td><td>Soil</td><td>Rock</td><td>Soil</td><td>Rock</td><td>Soil</td><td>Rock</td></tr><tr><td>17 ft</td><td>7 ft</td><td>19 ft</td><td>7 ft</td><td>20 ft</td><td>7 ft</td><td>(1)</td><td>7 ft</td></tr></table><table><tr><td colspan="4">Steel Requirements</td></tr><tr><td colspan="2">Vertical Bars</td><td colspan="2">Ties or Spiral</td></tr><tr><td>Size</td><td>Total</td><td>Size</td><td>Spacing or Pitch</td></tr><tr><td>#10</td><td>16</td><td>#4</td><td>12 inch</td></tr></table> (1): Shaft length is 22' for cohesive soil only. For cohesionless soil, contact geotechnical branch for design. (2): Do not construct high mast drilled shafts on ground slopes steeper than 1.5:1 without the approval of the Division of Traffic. If rock is encountered during drilling operations and confirmed by the engineer to be of sound quality, the shaft is only required to be further advanced into the rock by the length of rock socket shown in the table. The total length of the shaft need not be longer than that of soil alone. Both longitudinal rebar length and number of ties or spiral length shall be adjusted accordingly. If a shorter depth is desired for the drilled shaft, the contractor shall provide, for the state's review and approval, a detailed column design with individual site specific soil and rock analysis performed and approved by a Professional Engineer licensed in the Commonwealth of Kentucky. Spiral reinforcement may be substituted for ties. If spiral reinforcement is used, one and one-half closed coils shall be provided at the ends of each spiral unit. Subsurface conditions consisting of very soft clay or very loose saturated sand could result in soil parameters weaker than those assumed. Engineer shall consult with the geotechnical branch if such conditions are encountered. The bottom of the drilled hole shall be firm and thoroughly cleaned so no loose or compressible materials are present at the time of the concrete placement. If the drilled hole contains standing water, the concrete shall be placed using a tremie to displace water. Continuous concrete flow will be required to insure full displacement of any water. The reinforcement and anchor bolts shall be adequately supported in the proper positions so no movement occurs during concrete placement. Welding of anchor bolts to the reinforcing cage is unacceptable, templates shall be used. Exposed portions of the foundation shall be formed to create a smooth finished surface. All forming shall be removed upon completion of foundation construction.
Subsection: **Part:** **Revision:**	716.03.03 Trenching. A) Trenching of Conduit for Highmast Ducted Cables. Add the following after the first sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.

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Subsection:	716.03.03 Trenching.
Part:	B) Trenching of Conduit for Non-Highmast Cables.
Revision:	Add the following after the second sentence: If depths greater than 24 inches are necessary for either situation listed previously, obtain the Engineer's approval and maintain the required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.
Subsection:	716.03.10 Junction Boxes.
Revision:	Replace subsection title with the following: Electrical Junction Box.
Subsection:	716.04.07 Pole with Secondary Control Equipment.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished and installed. The Department will not measure mounting the cabinet to the pole, backfilling, restoration, any necessary hardware to anchor pole, or electrical inspection fees, and will consider them incidental to this item of work. The Department will also not measure furnishing and installing electrical service conductors, specified conduits, meter base, transformer, service panel, fused cutout, fuses, lighting arrestors, photoelectrical control, circuit breaker, contactor, manual switch, ground rods, and ground wires and will consider them incidental to this item of work.
Subsection:	716.04.08 Lighting Control Equipment.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished and installed. The Department will not measure constructing the concrete base, excavation, backfilling, restoration, any necessary anchors, or electrical inspection fees, and will consider them incidental to this item of work. The Department will also not measure furnishing and installing electrical service conductors, specified conduits, meter base, transformer, service panel, fused cutout, fuses, lighting arrestors, photoelectrical control, circuit breakers, contactor, manual switch, ground rods, and ground wires and will consider them incidental to this item of work.
Subsection:	716.04.09 Luminaire.
Revision:	Replace the first sentence with the following: The Department will measure the quantity as each individual unit furnished and installed.
Subsection:	716.04.10 Fused Connector Kits.
Revision:	Replace the first sentence with the following: The Department will measure the quantity as each individual unit furnished and installed.
Subsection:	716.04.13 Junction Box.
Revision:	Replace the subsection title with the following: Electrical Junction Box Type Various.
Subsection:	716.04.13 Junction Box.
Part:	A) Junction Electrical.
Revision:	Rename A) Junction Electrical to the following: A) Electrical Junction Box.
Subsection:	716.04.14 Trenching and Backfilling.
Revision:	Replace the second sentence with the following: The Department will not measure excavation, backfilling, underground utility warning tape (if required), the restoration of disturbed areas to original condition, and will consider them incidental to this item of work.

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Subsection: 716.04.18 Remove Lighting.
Revision: Replace the paragraph with the following:
The Department will measure the quantity as a lump sum for the removal of lighting equipment. The Department will not measure the disposal of all equipment and materials off the project by the contractor. The Department also will not measure the transportation of the materials and will consider them incidental to this item of work.

Subsection: 716.04.20 Bore and Jack Conduit.
Revision: Replace the paragraph with the following: The Department will measure the quantity in linear feet. This item shall include all work necessary for boring and installing conduit under an existing roadway. Construction methods shall be in accordance with Sections 706.03.02, paragraphs 1, 2, and 4.

Subsection: 716.05 PAYMENT.
Revision: Replace items 04810-04811, 20391NS835 and, 20392NS835 under Code, Pay Item, and Pay Unit with the following:

Code	Pay Item	Pay Unit
04810	Electrical Junction Box	Each
04811	Electrical Junction Box Type B	Each
20391NS835	Electrical Junction Box Type A	Each
20392NS835	Electrical Junction Box Type C	Each

Subsection: 723.02.02 Paint.
Revision: Replace sentence with the following: Conform to Section 821.

Subsection: 723.03 CONSTRUCTION.
Revision: Replace bullet 5) with the following: 5) AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims,

Subsection: 723.03.02 Poles and Bases Installation.
Revision: Replace the first sentence with the following:
Regardless of the station and offset noted, locate all poles/bases behind the guardrail a minimum of four feet from the front face of the guardrail to the front face of the pole base.

Subsection: 723.03.02 Poles and Bases Installation.
Part: A) Steel Strain and Mastarm Poles Installation
Revision: Replace the second paragraph with the following: For concrete base installation, see Section 716.03.02, B), 2), Paragraphs 2-7. Drilled shaft depth shall be based on the soil conditions encountered during drilling and slope condition at the site. Refer to the design chart below:

Subsection: 723.03.02 Poles and Bases Installation.
Part: B) Pedestal or Pedestal Post Installation.
Revision: Replace the fourth sentence of the paragraph with the following: For breakaway supports, conform to Section 12 of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.

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Subsection: **Part:** **Revision:**	723.03.03 Trenching. A) Under Roadway. Add the following after the second sentence: If depths greater than 24 inches are necessary, obtain the Engineer's approval and maintain ether required conduit depths coming into the junction boxes. No payment for additional junction boxes for greater depths will be allowed.
Subsection: **Revision:**	723.03.11 Wiring Installation. Add the following sentence between the fifth and sixth sentences: Provide an extra two feet of loop wire and lead-in past the installed conduit in poles, pedestals, and junction boxes.
Subsection: **Revision:**	723.03.12 Loop Installation. Replace the fourth sentence of the 2nd paragraph with the following: Provide an extra two feet of loop wire and lead-in past the installed conduit in poles, pedestals, and junction boxes.
Subsection: **Revision:**	723.04.02 Junction Box. Replace subsection title with the following: Electrical Junction Box Type Various.
Subsection: **Revision:**	723.04.03 Trenching and Backfilling. Replace the second sentence with the following: The Department will not measure excavation, backfilling, underground utility warning tape (if required), the restoration of disturbed areas to original condition, and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.10 Signal Pedestal. Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, specified conduits, fittings, ground rod, ground wire, backfilling, restoring disturbed areas, or other necessary hardware and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.15 Loop Saw Slot and Fill. Replace the second sentence with the following: The Department will not measure sawing, cleaning and filling induction loop saw slot, loop sealant, backer rod, and grout and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.16 Pedestrian Detector. Replace the paragraph with the following: The Department will measure the quantity as each individual unit furnished, installed and connected to pole/pedestal. The Department will not measure installing R10-3e (with arrow) sign, furnishing and installing mounting hardware for sign and will consider them incidental to this item of work.
Subsection: **Revision:**	723.04.18 Signal Controller- Type 170. Replace the second sentence with the following: The Department will not measure constructing the concrete base or mounting the cabinet to the pole, connecting the signal and detectors, excavation, backfilling, restoration, any necessary pole mounting hardware, electric service, or electrical inspection fees and will consider them incidental to this item of work. The Department will also not measure furnishing and connecting the induction of loop amplifiers, pedestrian isolators, load switches, model 400 modem card; furnishing and installing electrical service conductors, specified conduits, anchors, meter base, fused cutout, fuses, ground rods, ground wires and will consider them incidental to this item of work.

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Subsection:	723.04.20 Install Signal Controller - Type 170.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit installed. The Department will not measure constructing the concrete base or mounting the cabinet to the pole, connecting the signal and detectors, and excavation, backfilling, restoration, any necessary pole mounting hardware, electric service, or electrical inspection fees and will consider them incidental to this item of work. The Department will also not measure connecting the induction loop amplifiers, pedestrian, isolators, load switches, model 400 modem card; furnishing and installing electrical service conductors, specified conduits, anchors, meter base, fused cutout, fuses, ground rods, ground wires and will consider them incidental to this item of work.
Subsection:	723.04.22 Remove Signal Equipment.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as a lump sum removal of signal equipment. The Department will not measure the return of control equipment and signal heads to the Department of Highways as directed by the District Traffic Engineer. The Department also will not measure the transportation of materials of the disposal of all other equipment and materials off the project by the contractor and will consider them incidental to this item of work.
Subsection:	723.04.28 Install Pedestrian Detector Audible.
Revision:	Replace the second sentence with the following: The Department will not measure installing sign R10-3e (with arrow) and will consider it incidental to this item of work.
Subsection:	723.04.29 Audible Pedestrian Detector.
Revision:	Replace the second sentence with the following: The Department will not measure furnishing and installing the sign R10-3e (with arrow) and will consider it incidental to this item of work.
Subsection:	723.04.30 Bore and Jack Conduit.
Revision:	Replace the paragraph with the following: The Department will measure the quantity in linear feet. This item shall include all work necessary for boring and installing conduit under an existing roadway. Construction methods shall be in accordance with Sections 706.03.02, paragraphs 1, 2, and 4.
Subsection:	723.04.31 Install Pedestrian Detector.
Revision:	Replace the paragraph with the following: The Department will measure the quantity as each individual unit installed and connected to pole/pedestal. The Department will not measure installing sign R 10-3e (with arrow) and will consider it incidental to this item of work.
Subsection:	723.04.32 Install Mast Arm Pole.
Revision:	Replace the second sentence with the following: The Department will not measure arms, signal mounting brackets, anchor bolts, or any other necessary hardware and will consider them incidental to this item of work.
Subsection:	723.04.33 Pedestal Post.
Revision:	Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, conduit, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

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Subsection: 723.04.36 Traffic Signal Pole Base.
Revision: Replace the second sentence with the following: The Department will not measure excavation, reinforcing steel, anchor bolts, specified conduits, ground rods, ground wires, backfilling, or restoration and will consider them incidental to this item of work.

Subsection: 723.04.37 Install Signal Pedestal.
Revision: Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

Subsection: 723.04.38 Install Pedestal Post.
Revision: Replace the second sentence with the following: The Department will not measure excavation, concrete, reinforcing steel, anchor bolts, specified conduits, fittings, ground rod, ground wire, backfilling, restoration, or any other necessary hardware and will consider them incidental to this item of work.

Subsection: 723.05 PAYMENT.
Revision: Replace items 04810-04811, 20391NS835 and, 20392NS835 under Code, Pay Item, and Pay Unit with the following:

Code	Pay Item	Pay Unit
04810	Electrical Junction Box	Each
04811	Electrical Junction Box Type B	Each
20391NS835	Electrical Junction Box Type A	Each
20392NS835	Electrical Junction Box Type C	Each

Subsection: 804.01.02 Crushed Sand.
Revision: Delete last sentence of the section.

Subsection: 804.01.06 Slag.
Revision: Add subsection and following sentence.
Provide blast furnace slag sand where permitted. The Department will allow steel slag sand only in asphalt surface applications.

Subsection: 804.04 Asphalt Mixtures.
Revision: Replace the subsection with the following:
Provide natural, crushed, conglomerate, or blast furnace slag sand, with the addition of filler as necessary, to meet gradation requirements. The Department will allow any combination of natural, crushed, conglomerate or blast furnace slag sand when the combination is achieved using cold feeds at the plant. The Engineer may allow other fine aggregates.

Subsection: 806.03.01 General Requirements.
Revision: Replace the second sentence of the paragraph with the following:
Additionally, the material must have a minimum solubility of 99.0 percent when tested according to AASHTO T 44 and PG 76-22 must exhibit a minimum recovery of 60 percent, with a J_{NR} (nonrecoverable creep compliance) between 0.1 and 0.5, when tested according to AASHTO TP 70.

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<table>
<tr><td>Subsection:
Table:
Revision:</td><td>806.03.01 General Requirements.
PG Binder Requirements and Price Adjustment Schedule
Replace the Elastic Recovery, % (3) (AASHTO T301) and all corresponding values in the table with the following:
<table><tr><th>Test</th><th>Specification</th><th>100% Pay</th><th>90% Pay</th><th>80% Pay</th><th>70% Pay</th><th>50%Pay(1)</th></tr><tr><td>MSCR recovery, % (3) (AASHTO TP 70)</td><td>60 Min.</td><td>≥58</td><td>56</td><td>55</td><td>54</td><td><53</td></tr></table></td></tr>
<tr><td>Subsection:
Table:
Superscript:
Revision:</td><td>806.03.01 General Requirements.
PG Binder Requirements and Price Adjustment Schedule
(3)
Replace (3) with the following:
Perform testing at 64°C.</td></tr>
<tr><td>Subsection:
Revision:</td><td>813.04 Gray Iron Castings.
Replace the reference to "AASHTO M105" with "ASTM A48".</td></tr>
<tr><td>Subsection:
Number:
Revision:</td><td>813.09.02 High Strength Steel Bolts, Nuts, and Washers.
A) Bolts.
Delete first paragraph and "Hardness Number" Table. Replace with the following:
A) Bolts. Conform to ASTM A325 (AASHTO M164) or ASTM A490 (AASHTO 253) as applicable.</td></tr>
<tr><td>Subsection:
Revision:</td><td>814.04.02 Timber Guardrail Posts.
Third paragraph, replace the reference to "AWPA C14" with "AWPA U1, Section B, Paragraph 4.1".</td></tr>
<tr><td>Subsection:
Revision:</td><td>814.04.02 Timber Guardrail Posts.
Replace the first sentence of the fourth paragraph with the following:
Use any of the species of wood for round or square posts covered under AWPA U1.</td></tr>
<tr><td>Subsection:
Revision:</td><td>814.04.02 Timber Guardrail Posts.
Fourth paragraph, replace the reference to "AWPA C2" with "AWPA U1, Section B, Paragraph 4.1".</td></tr>
<tr><td>Subsection:
Revision:</td><td>814.04.02 Timber Guardrail Posts.
Delete the second sentence of the fourth paragraph.</td></tr>
<tr><td>Subsection:
Revision:</td><td>814.05.02 Composite Plastic.
1) Add the following to the beginning of the first paragraph: Select composite offset blocks conforming to this section and assure blocks are from a manufacturer included on the Department's List of Approved Materials.
2) Delete the last paragraph of the subsection.</td></tr>
<tr><td>Subsection:
Revision:</td><td>816.07.02 Wood Posts and Braces.
First paragraph, replace the reference to "AWPA C5" with "AWPA U1, Section B, Paragraph 4.1".</td></tr>
<tr><td>Subsection:
Revision:</td><td>816.07.02 Wood Posts and Braces.
Delete the second sentence of the first paragraph.</td></tr>
<tr><td>Subsection:
Revision:</td><td>818.07 Preservative Treatment.
First paragraph, replace all references to "AWPA C14" with "AWPA U1, Section A".</td></tr>
</table>

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Subsection: **Revision:**	834.14 Lighting Poles. Replace the first sentence with the following: Lighting pole design shall be in accordance with loading and allowable stress requirements of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims, with the exception of the following: The Cabinet will waive the requirement stated in the first sentence of Section 5.14.6.2 – Reinforced Holes and Cutouts for high mast poles (only). The minimum diameter at the base of the pole shall be 22 inches for high mast poles (only).
Subsection **Revision:**	834.14.03 High Mast Poles. Remove the second and fourth sentence from the first paragraph.
Subsection **Revision:**	834.14.03 High Mast Poles. Replace the third paragraph with the following: Provide calculations and drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection: **Revision:**	834.14.03 High Mast Poles. Replace paragraph six with the following: Provide a pole section that conforms to ASTM A 595 grade A with a minimum yield strength of 55 KSI or ASTM A 572 with a minimum yield strength of 55 KSI. Use tubes that are round or 16 sided with a four inch corner radius, have a constant linear taper of .144 in/ft and contain only one longitudinal seam weld. Circumferential welded tube butt splices and laminated tubes are not permitted. Provide pole sections that are telescopically slip fit assembled in the field to facilitate inspection of interior surface welds and the protective coating. The minimum length of the telescopic slip splices shall be 1.5 times the inside diameter of the exposed end of the female section. Use longitudinal seam welds as commended in Section 5.15 of the AASHTO 2013 Specifications. The thickness of the transverse base shall not be less than 2 inches. Plates shall be integrally welded to the tubes with a telescopic welded joint or a full penetration groove weld with backup bar. The handhole cover shall be removable from the handhole frame. One the frame side opposite the hinge, provide a mechanism on the handhole cover/frame to place the Department's standard padlock as specified in Section 834.25. The handhole frame shall have two stainless studs installed opposite the hinge to secure the handhole cover to the frame which includes providing stainless steel wing nuts and washers. The handhole cover shall be manufactured from 0.25 inch thick galvanized steel (ASTM A 153) and have a neoprene rubber gasket that is permanently secured to the handhole frame to insure weather-tight protection. The hinge shall be manufactured from 7-guage stainless steel to provide adjustability to insure weather-tight fit for the cover. The minimum clear distance between the transverse plate and the bottom opening of the handhole shall not be less than the diameter of the bottom tube of the pole but needs to be at least 15 inches. Provide products that are hot-dip galvanized to the requirements of either ASTM A123 (fabricated products) or ASTM A 153 (hardware items).
Subsection: **Revision:**	834.16 ANCHOR BOLTS. Insert the following sentence at the beginning of the paragraph: The anchor bolt design shall follow the NCHRP Report 494 Section 2.4 and NCHRP 469 Appendix A Specifications.

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Subsection: **Revision:**	834.17.01 Conventional. Add the following sentence after the second sentence: Provide a waterproof sticker mounted on the bottom of the housing that is legible from the ground and indicates the wattage of the fixture by providing the first two numbers of the wattage.
Subsection: **Revision:**	834.21.01 Waterproof Enclosures. Replace the last five sentences in the second paragraph with the following sentences: Provide a cabinet door with a louvered air vent, filter-retaining brackets and an easy to clean metal filter. Provide a cabinet door that is keyed with a factory installed standard no. 2 corbin traffic control key. Provide a light fixture with switch and bulb. Use a 120-volt fixture and utilize a L.E.D. bulb (equivalent to 60 watts minimum). Fixture shall be situated at or near the top of the cabinet and illuminate the contents of the cabinet. Provide a 120 VAC GFI duplex receptacle in the enclosure with a separate 20 amp breaker.
Subsection: **Revision:**	835.07 Traffic Poles. Replace the first sentence of the first paragraph with the following: Pole diameter and wall thickness shall be calculated in accordance with the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection: **Revision:**	835.07 Traffic Poles. *Replace the first sentence of the fourth paragraph with the following: Ensure transverse plates have a thickness ≥ 2 inches. *Add the following sentence to the end of the fourth paragraph: The bottom pole diameter shall not be less than 16.25 inches.
Subsection: **Revision:**	835.07 Traffic Poles. Replace the third sentence of the fifth paragraph with the following: For anchor bolt design, pole forces shall be positioned in such a manner to maximize the force on any individual anchor bolt regardless of the actual anchor bolt orientation with the pole.
Subsection: **Revision:**	835.07 Traffic Poles. Replace the first and second sentence of the sixth paragraph with the following: The pole handhole shall be 25 inches by 6.5 inches. The handhole cover shall be removable from the handhole frame. On the frame side opposite the hinge, provide a mechanism on the handhole cover/frame to place the Department's standard padlock as specified in Section 834.25. The handhole frame shall have two stainless studs installed opposite the hinge to secure the handhole cover to the frame which includes providing stainless steel wing nuts and washers. The handhole cover shall be manufactured from 0.25 inch thick galvanized steel (ASTM 153) and have a neoprene rubber gasket that is permanently secured to the handhole frame to insure weather-tight protection. The hinge shall be manufactured from 7 gauge stainless steel to provide adjustability to insure a weather-tight fit for the cover. The minimum clear distance between the transverse plate and the bottom opening of the handhole shall not be less than the diameter of the bottom tube but needs to be at least 12 inches.

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Subsection:	835.07 Traffic Poles.
Revision:	*Replace the first sentence of the last paragraph with the following: Provide calculations and drawings that are stamped by a Professional Engineer licensed in the Commonwealth of Kentucky. *Replace the third sentence of the last paragraph with the following: All tables referenced in 835.07 are found in the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, 2013-6th Edition with current interims.
Subsection:	835.07.01 Steel Strain Poles.
Revision:	Replace the second sentence of the second paragraph with the following: The detailed analysis shall be certified by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection:	835.07.01 Steel Strain Poles.
Revision:	Replace number 7. after the second paragraph with the following: 7. Fatigue calculations should be shown for all fatigue related connections. Provide the corresponding detail, stress category and example from table 11.9.3.1-1.
Subsection:	835.07.02 Mast Arm Poles.
Revision:	Replace the second sentence of the fourth paragraph with the following: The detailed analysis shall be certified by a Professional Engineer licensed in the Commonwealth of Kentucky.
Subsection:	835.07.02 Mast Arm Poles.
Revision:	Replace number 7) after the fourth paragraph with the following: 7) Fatigue calculations should be shown for all fatigue related connections. Provide the corresponding detail, stress category and example from table 11.9.3.1-1.
Subsection:	835.07.03 Anchor Bolts.
Revision:	Add the following to the end of the paragraph: There shall be two steel templates (one can be used for the headed part of the anchor bolt when designed in this manner) provided per pole. Templates shall be contained within a 26.5 inch diameter. All templates shall be fully galvanized (ASTM A 153).
Subsection:	835.16.05 Optical Units.
Revision:	Replace the 3rd paragraph with the following: The list of certified products can be found on the following website: http://www.intertek.com.
Subsection:	835.19.01 Pedestrian Detector Body.
Revision:	Replace the first sentence with the following: Provide a four holed pole mounted aluminum rectangular housing that is compatible with the pedestrian detector.
Subsection:	843.01.01 Geotextile Fabric.
Table:	TYPE I FABRIC GEOTEXTILES FOR SLOPE PROTECTION AND CHANNEL LINING
Revision:	Add the following to the chart:

Property	Minimum Value[(1)]	Test Method
CBR Puncture (lbs)	494	ASTM D6241
Permittivity (1/s)	0.7	ASTM D4491

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Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE II FABRIC GEOTEXTILES FOR UNDERDRAINS
Revision: Add the following to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	210	ASTM D6241
Permittivity (1/s)	0.5	ASTM D4491

Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE III FABRIC GEOTEXTILES FOR SUBGRADE OR EMBANKMENT STABILIZATION
Revision: Add the following to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	370	ASTM D6241
Permittivity (1/s)	0.05	ASTM D4491

Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE IV FABRIC GEOTEXTILES FOR EMBANKMENT DRAINAGE BLANKETS AND PAVEMENT EDGE DRAINS
Revision: Add the following to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	309	ASTM D6241
Permittivity (1/s)	0.5	ASTM D4491

Subsection: 843.01.01 Geotextile Fabric.
Table: TYPE V HIGH STRENGTH GEOTEXTILE FABRIC
Revision: Make the following changes to the chart:

Property	Minimum Value[1]	Test Method
CBR Puncture (lbs)	618	ASTM D6241
Grab Strength (lbs)	700	ASTM D4632
Apparent Opening Size	U.S. #40[3]	ASTM D4751

[3] Maximum average roll value.

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SPECIAL NOTE FOR PORTABLE CHANGEABLE MESSAGE SIGNS

This Special Note will apply when indicated on the plans or in the proposal.

1.0 DESCRIPTION. Furnish, install, operate, and maintain variable message signs at the locations shown on the plans or designated by the Engineer. Remove and retain possession of variable message signs when they are no longer needed on the project.

2.0 MATERIALS.

2.1 General. Use LED Variable Message Signs Class I, II, or III, as appropriate, from the Department's List of Approved Materials.

Unclassified signs may be submitted for approval by the Engineer. The Engineer may require a daytime and nighttime demonstration. The Engineer will make a final decision within 30 days after all required information is received.

2.2 Sign and Controls. All signs must:

1) Provide 3-line messages with each line being 8 characters long and at least 18 inches tall. Each character comprises 35 pixels.
2) Provide at least 40 preprogrammed messages available for use at any time. Provide for quick and easy change of the displayed message; editing of the message; and additions of new messages.
3) Provide a controller consisting of:
   a) Keyboard or keypad.
   b) Readout that mimics the actual sign display. (When LCD or LCD type readout is used, include backlighting and heating or otherwise arrange for viewing in cold temperatures.)
   c) Non-volatile memory or suitable memory with battery backup for storing pre-programmed messages.
   d) Logic circuitry to control the sequence of messages and flash rate.
4) Provide a serial interface that is capable of supporting complete remote control ability through land line and cellular telephone operation. Include communication software capable of immediately updating the message, providing complete sign status, and allowing message library queries and updates.
5) Allow a single person easily to raise the sign to a satisfactory height above the pavement during use, and lower the sign during travel.
6) Be Highway Orange on all exterior surfaces of the trailer, supports, and controller cabinet.
7) Provide operation in ambient temperatures from -30 to + 120 degrees Fahrenheit during snow, rain and other inclement weather.
8) Provide the driver board as part of a module. All modules are interchangeable, and have plug and socket arrangements for disconnection and reconnection. Printed circuit boards associated with driver boards have a conformable coating to protect against moisture.
9) Provide a sign case sealed against rain, snow, dust, insects, etc. The lens is UV stabilized clear plastic (polycarbonate, acrylic, or other approved material) angled to prevent glare.
10) Provide a flat black UV protected coating on the sign hardware, character PCB, and appropriate lens areas.
11) Provide a photocell control to provide automatic dimming.

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12) Allow an on-off flashing sequence at an adjustable rate.
13) Provide a sight to aim the message.
14) Provide a LED display color of approximately 590 nm amber.
15) Provide a controller that is password protected.
16) Provide a security device that prevents unauthorized individuals from accessing the controller.
17) Provide the following 3-line messages preprogrammed and available for use when the sign unit begins operation:

/KEEP/RIGHT/⇒⇒⇒/
/KEEP/LEFT/⇐⇐⇐/
/LOOSE/GRAVEL/AHEAD/
/RD WORK/NEXT/**MILES/
/TWO WAY/TRAFFIC/AHEAD/
/PAINT/CREW/AHEAD/
/REDUCE/SPEED/**MPH/
/BRIDGE/WORK/***0 FT/
/MAX/SPEED/**MPH/
/SURVEY/PARTY/AHEAD/
/MIN/SPEED/**MPH/
/ICY/BRIDGE/AHEAD/ /ONE LANE/BRIDGE/AHEAD/
/ROUGH/ROAD/AHEAD/
/MERGING/TRAFFIC/AHEAD/
/NEXT/***/MILES/
/HEAVY/TRAFFIC/AHEAD/
/SPEED/LIMIT/**MPH/
/BUMP/AHEAD/
/TWO/WAY/TRAFFIC/

*Insert numerals as directed by the Engineer.
Add other messages during the project when required by the Engineer.

2.3 Power.

1) Design solar panels to yield 10 percent or greater additional charge than sign consumption. Provide direct wiring for operation of the sign or arrow board from an external power source to provide energy backup for 21 days without sunlight and an on-board system charger with the ability to recharge completely discharged batteries in 24 hours.

3.0 CONSTRUCTION. Furnish and operate the variable message signs as designated on the plans or by the Engineer. Ensure the bottom of the message panel is a minimum of 7 feet above the roadway in urban areas and 5 feet above in rural areas when operating. Use Class I, II, or III signs on roads with a speed limit less than 55 mph. Use Class I or II signs on roads with speed limits 55 mph or greater.

Maintain the sign in proper working order, including repair of any damage done by others, until completion of the project. When the sign becomes inoperative, immediately repair or replace the sign. Repetitive problems with the same unit will be cause for rejection and replacement.

Use only project related messages and messages directed by the Engineer, unnecessary messages lessen the impact of the sign. Ensure the message is displayed in either one or 2 phases with each phase having no more than 3 lines of text. When no message is needed, but it is necessary to know if the sign is operable, flash only a pixel.

When the sign is not needed, move it outside the clear zone or where the Engineer directs. Variable Message Signs are the property of the Contractor and shall be removed from the project when no longer needed. The Department will not assume ownership of these signs.

4.0 MEASUREMENT. The final quantity of Variable Message Sign will be

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the actual number of individual signs acceptably furnished and operated during the project. The Department will not measure signs replaced due to damage or rejection.

5.0 PAYMENT. The Department will pay for the Variable Message Signs at the unit price each. The Department will not pay for signs replaced due to damage or rejection. Payment is full compensation for furnishing all materials, labor, equipment, and service necessary to, operate, move, repair, and maintain or replace the variable message signs. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
02671	Portable Changeable Message Sign	Each

Effective June 15, 2012

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SPECIAL NOTE FOR TURF REINFORCING MAT

1.0 DESCRIPTION. Install turf reinforcement mat at locations specified in the Contract or as the Engineer directs. Section references herein are to the Department's 2008 Standard Specifications for Road and Bridge Construction.

2.0 MATERIALS.

2.1 Turf Reinforcement Mat (TRM). Use a Turf Reinforcement Mat defined as permanent rolled erosion control product composed of non-degradable synthetic fibers, filaments, nets, wire mesh and/or other elements, processed into a three-dimensional matrix of sufficient thickness and from the Department's List of Approved Materials. Mats must be 100% UV stabilized materials. For TRMs containing degradable components, all physical property values must be obtained on the non-degradable portion of the matting exclusively. Ensure product labels clearly show the manufacturer or supplier name, style name, and roll number. Ensure labeling, shipment and storage follows ASTM D-4873. The Department will require manufacturer to provide TRMs that are machine constructed web of mechanically or melt bonded nondegradable fibers entangled to form a three dimensional matrix. The Department will require all long term performance property values in table below to be based on non degradable portion of the matting alone. Approved methods include polymer welding, thermal or polymer fusion, or placement of fibers between two high strength biaxially oriented nets mechanically bound by parallel stitching with polyolefin thread. Ensure that mats designated in the plans as Type 4 mats, are not to be manufactured from discontinuous or loosely held together by stitching or glued netting or composites. Type 4 mats shall be composed of geosynthetic matrix that exhibits a very high interlock and reinforcement capacities with both soil and root systems and with high tensile modulus. The Department will require manufacturer to use materials chemically and biologically inert to the natural soil environments conditions. Ensure the blanket is smolder resistant without the use of chemical additives. When stored, maintain the protective wrapping and elevate the mats off the ground to protect them from damage. The Department will not specify these materials for use in heavily acidic coal seam areas or other areas with soil problems that would severally limit vegetation growth.

A) Dimensions. Ensure TRMs are furnished in strips with a minimum width of 4 feet and length of 50 feet.
B) Weight. Ensure that all mat types have a minimum mass per unit area of 7 ounces per square yard according to ASTM D 6566.
C) Performance Testing: The Department will require AASHTO's NTPEP index testing. The Department will also require the manufacturer to perform internal MARV testing at a Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP) accredited laboratory for tensile strength, tensile elongation, mass per unit area, and thickness once every 24,000 yds of production or whatever rate is required to ensure 97.7% confidence under ASTM D4439& 4354. The Department will require Full scale testing for slope and channel applications shear stress shall be done under ASTM D 6459, ASTM D 6460-07 procedures.

2.2 Classifications

The basis for selection of the type of mat required will be based on the long term shear stress level of the mat of the channel in question or the degree of slope to protect and will be designated in the contract. The Type 4 mats are to be used at structural backfills protecting critical

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structures, utility cuts, areas where vehicles may be expected to traverse the mat, channels with large heavy drift, and where higher factors of safety, very steep slopes and/or durability concerns are needed as determined by project team and designer and will be specified in the plans by designer.

Turf Reinforcement Matting					
Properties[1]	Type 1	Type 2	Type 3	Type 4	Test Method
Minimum tensile Strength lbs/ft	125	150	175	3000 by 1500	ASTM D6818[2]
UV stability (minimum % tensile retention)	80	80	80	90	ASTM D4355[3] (1000-hr exposure)
Minimum thickness (inches)	0.25	0.25	0.25	0.40	ASTM D6525
Slopes applications	2H:1V or flatter	1.5H:1V or flatter	1H:1V or flatter	1 H: 1V or greater	
Shear stress lbs/ft^2 Channel applications	6.0[4]	8.0[4]	10.0[4]	12.0[4]	ASTM D6459 ASTM D6460-07

[1] For TRMs containing degradable components, all physical property values must be obtained on the non-degradable portion of the matting alone.
[2]Minimum Average Roll Values for tensile strength of sample material machine direction.
[3]Tensile Strength percentage retained after stated 1000 hr duration of exposure under ASTM D4355 testing. Based on nondegradable components exclusively.
[4]Maximum permissible shear design values based on short-term (0.5 hr) vegetated data obtained by full scale flume testing ASTM D6459, D6460-07. Based on nondegradable components exclusively. Testing will be done at Independent Hydraulics Facility such as Colorado State University hydraulics laboratory, Utah State University hydraulics laboratory, Texas Transportation Institute (TTI) hydraulics and erosion control laboratory.

2.3 Quality Assurance Sampling, Testing, and Acceptance

A) Provide TRM listed on the Department's List of Approved Materials. Prior to inclusion on the LAM, the manufacturer of TRM must meet the physical and performance criteria as outlined in the specification and submit a Letter Certifying compliance of the product under the above ASTM testing procedures and including a copy of report from Full Scale Independent Hydraulics Facility that Fully Vegetated Shear Stress meets shear stress requirements tested under D6459 and D6460-07.

B) Contractors will provide a Letter of Certification from Manufacturer stating the product name, manufacturer, and that the product MARV product unit testing results meets Department criteria. Provide Letters once per project and for each product.

C) Acceptance shall be in accordance with ASTM D-4759 based on testing performed by a Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP) accredited laboratory using Procedure A of ASTM D-4354.

Current mats meeting the above criteria are shown on the Department's List of Approved Materials.

2.4 Fasteners. When the mat manufacturer does not specify a specific fastener, use steel wire U-shaped staples with a minimum diameter of 0.09 inches (11 gauge), a minimum width of one inch and a minimum length of 12 inches. Use a heavier gauge when working in rocky or clay soils and longer lengths in sandy soils as directed by Engineer or Manufacturer's Representative. Provide staples with colored tops when requested by the Engineer.

3.0 CONSTRUCTION. When requested by the Engineer, provide a Manufacturer's Representative on-site to oversee and approve the initial installation of the mat. When requested by the Engineer, provide a letter from the Manufacturer approving the installation. When there is a conflict between the Department's criteria and the Manufacturer's criteria, construct using the more restrictive. The Engineer and Manufacturer's Representative must approve all alternate installation methods prior to execution. Construct according to the Manufacturer's recommendations and the following as minimum installation technique:

3.1 Site Preparation. Grade areas to be treated with matting and compact. Remove large rocks, soil clods, vegetation, roots, and other sharp objects that could keep the mat from intimate contact with subgrade. Prepare seedbed by loosening the top 2 to 3 inch of soil.

3.2 Installation. Install mats according to Standard Drawing Sepias "Turf Mat Channel Installation" and "Turf Mat Slope Installation." Install mats at the specified elevation and alignment. Anchor the mats with staples with a minimum length of 12 inches. Use longer anchors for installations in sandy, loose, or wet soils as directed by the Engineer or Manufacturer's Representative. The mat should be in direct contact with the soil surface.

4.0 MEASUREMENT. The Department will measure the quantity of Turf Reinforcement Mat by the square yard of surface covered. The Department will not measure preparation of the bed, providing a Manufacturer's Representative, topsoil, or seeding for payment and will consider them incidental to the Turf Reinforcement Mat. The Department will not measure any reworking of slopes or channels for payment as it is considered corrective work and incidental to the Turf Reinforcement Mat. Seeding and protection will be an incidental item.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
23274EN11F	Turf Reinforcement Mat 1	Square Yard
23275EN11F	Turf Reinforcement Mat 2	Square Yard
23276EN11F	Turf Reinforcement Mat 3	Square Yard
23277EN11F	Turf Reinforcement Mat 4	Square Yard

SPECIAL NOTE FOR BARCODE LABEL ON PERMANENT SIGNS

1.0 DESCRIPTION. Install barcode label on sheeting signs. Section references herein are to the Department's 2012 Standard Specifications for Road and Bridge Construction.

2.0 MATERIALS. The Department will provide the Contractor with a 2 inch x 1 inch foil barcode label for each permanent sheeting sign. A unique number will be assigned to each barcode label.

The Contractor shall contact the Operations and Pavement Management Branch in the Division of Maintenance at (502) 564-4556 to obtain the barcode labels.

3.0 CONSTRUCTION. Apply foil barcode label in the lower right quadrant of the sign back. Signs where the bottom edge is not parallel to the ground, the lowest corner of the sign shall serve as the location to place the barcode label. The barcode label shall be placed no less than one-inch and no more than three inches from any edge of the sign. The barcode must be placed so that the sign post does not cover the barcode label.

Barcodes shall be applied in an indoor setting with a minimum air temperature of 50°F or higher. Prior to application of the barcode label, the back of the sign must be clean and free of dust, oil, etc. If the sign is not clean, an alcohol swab shall be used to clean the area. The area must be allowed to dry prior to placement of the barcode label.

Data for each sign shall include the barcode number, MUTCD reference number, sheeting manufacturer, sheeting type, manufacture date, color of primary reflective surface, installation date, latitude and longitude using the North American Datum of 1983 (NAD83) or the State Plane Coordinates using an x and y ordinate of the installed location.

Data should be provided electronically on the TC 71-229 Sign Details Information and TC 71-230 Sign Assembly Information forms. The Contractor may choose to present the data in a different format provided that the information submitted to the Department is equivalent to the information required on the Department TC forms. The forms must be submitted in electronic format regardless of which type of form is used. The Department will not accept PDF or handwritten forms. These completed forms must be submitted to the Department prior to final inspection of the signs. The Department will not issue formal acceptance for the project until the TC 71-229 and TC-230 electronic forms are completed for all signs and sign assemblies on the project.

4.0 MEASUREMENT. The Department will measure all work required for the installation of the barcode label and all work associated with completion and submission of the sign inventory data (TC 71-229 and TC 71-230).

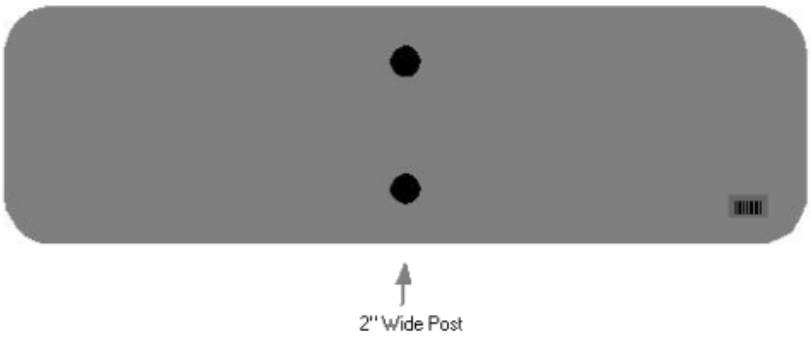
The installation of the permanent sign will be measured in accordance to Section 715.

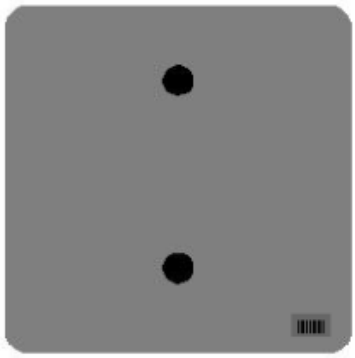
5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
24631EC	Barcode Sign Inventory	Each

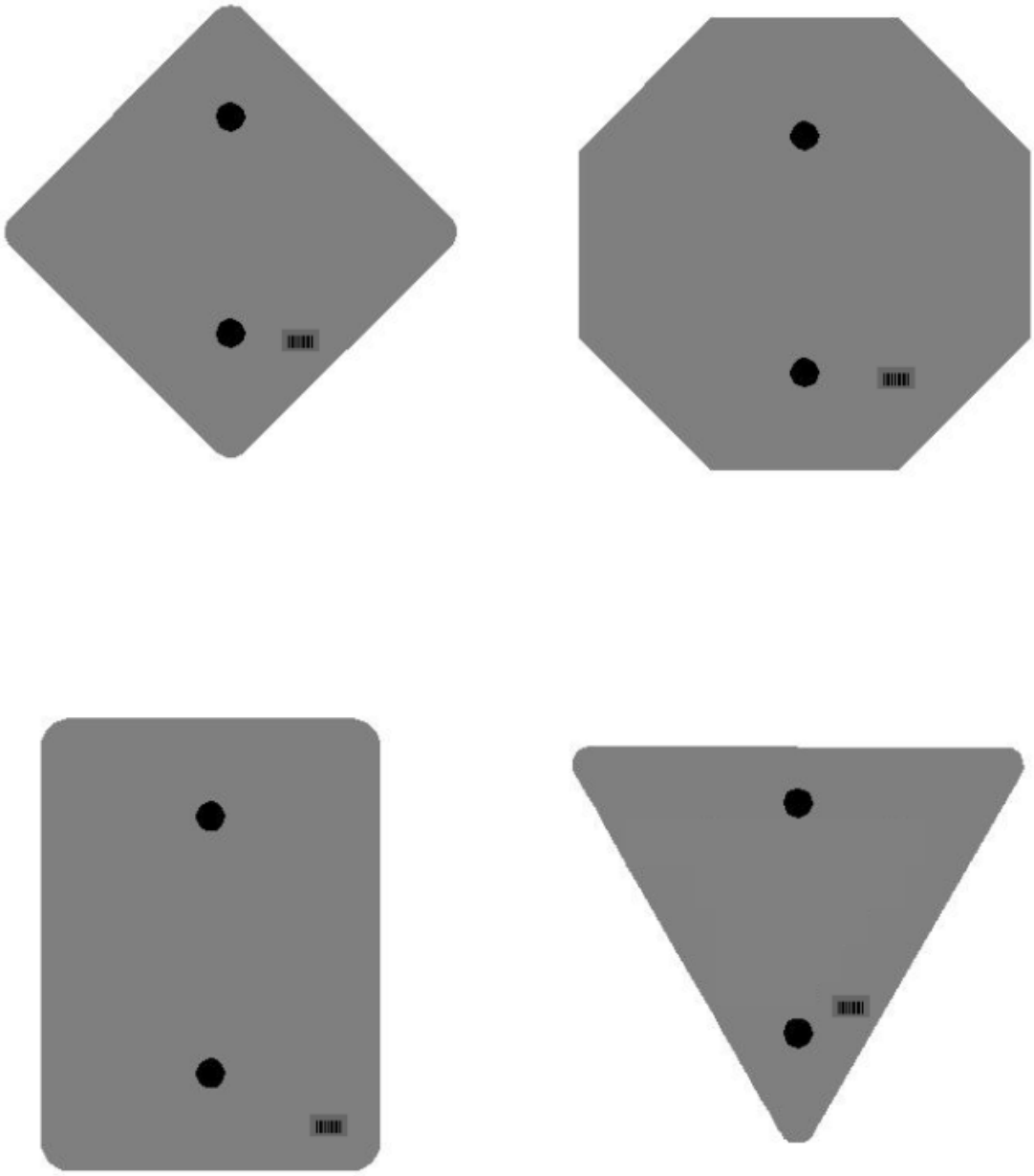
The Department will not make payment for this item until all barcodes are installed and sign inventory is complete on every permanent sign installed on the project. The Department will make payment for installation of the permanent sign in accordance to Section 715. The Department will consider payment as full compensation for all work required under this special note.

One Sign Post

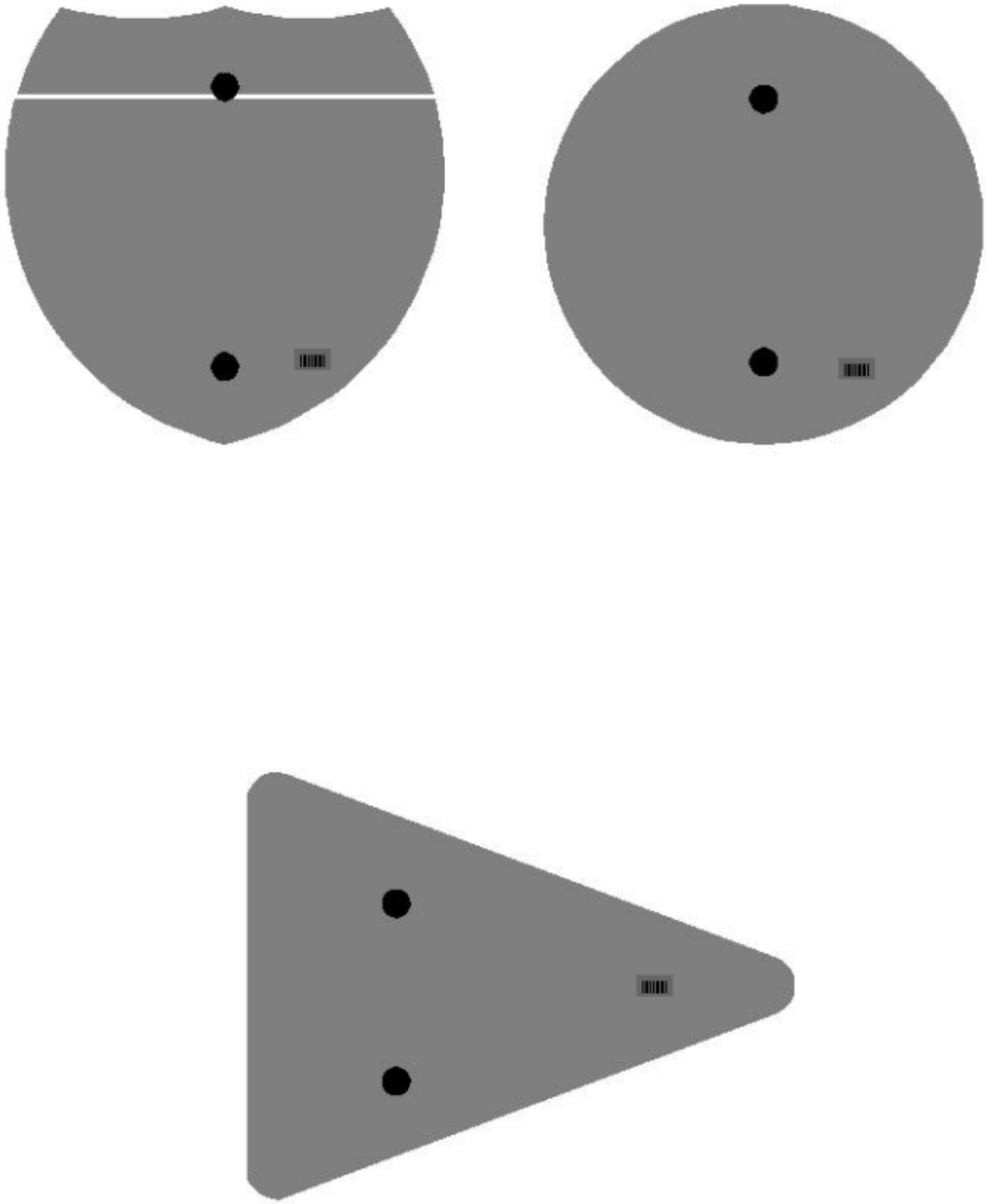




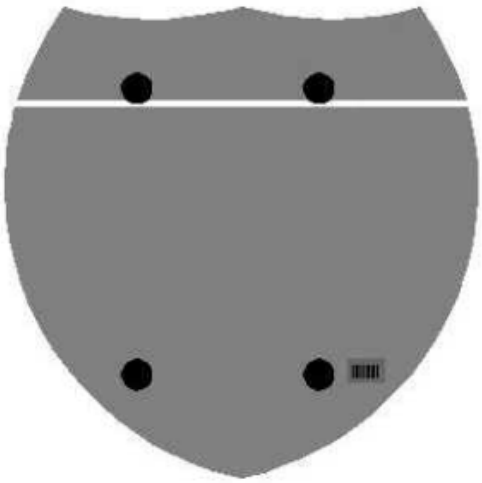
One Sign Post



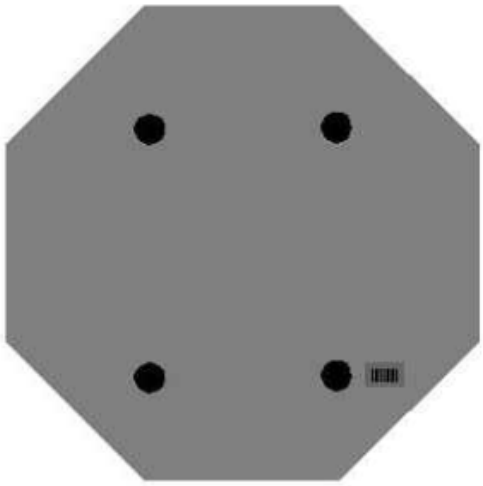
One Sign Post



Double Sign Post

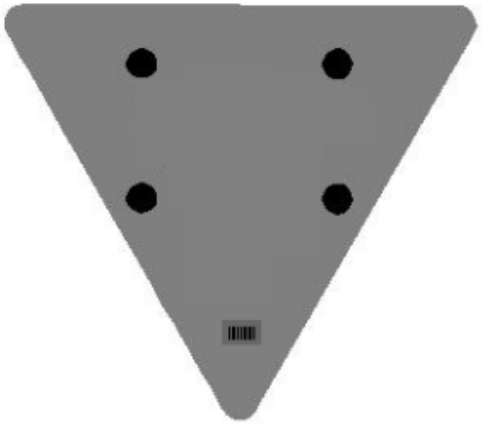


Interstate
Shield



48" Stop

2 Post Signs



SPECIAL NOTE FOR LONGITUDINAL PAVEMENT JOINT ADHESIVE

1. DESCRIPTION. This specification covers the requirements and practices for applying an asphalt adhesive material to the longitudinal joint of the surface course of an asphalt pavement. Apply the adhesive to the face of longitudinal joint between driving lanes for the first lane paved. Then, place and compact the adjacent lane against the treated face to produce a strong, durable, waterproof longitudinal joint.

2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Joint Adhesive. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide an adhesive conforming to the following requirements:

Property	Specification	Test Procedure
Viscosity, 400 ° F (Pa·s)	4.0 – 10.0	ASTM D 4402
Cone Penetration, 77 ° F	60 – 100	ASTM D 5329
Flow, 140 ° F (mm)	5.0 max.	ASTM D 5329
Resilience, 77 ° F (%)	30 min.	ASTM D 5329
Ductility, 77 ° F (cm)	30.0 min.	ASTM D 113
Ductility, 39 ° F (cm)	30.0 min.	ASTM D 113
Tensile Adhesion, 77 ° F (%)	500 min.	ASTM D 5329, Type II
Softening Point, ° F	171 min.	AASHTO T 53
Asphalt Compatibility	Pass	ASTM D 5329

Ensure the temperature of the pavement joint adhesive is between 380 and 410 °F when the material is extruded in a 0.125-inch-thick band over the entire face of the longitudinal joint.

2.2. Equipment.

2.2.1 Melter Kettle. Provide an oil-jacketed, double-boiler, melter kettle equipped with any needed agitation and recirculating systems.

2.2.2 Applicator System. Provide a pressure-feed-wand applicator system with an applicator shoe attached.

2.3 Personnel. Ensure a technical representative from the manufacturer of the pavement joint adhesive is present during the initial construction activities and available upon the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the pavement joint adhesive, ensure the face of the longitudinal joint is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the joint face by the use of compressed air.

Ensure this preparation process occurs shortly before application to prevent the return of debris on the joint face.

3.2 Pavement Joint Adhesive Application. Ensure the ambient temperature is a minimum of 40 ^{o} F during the application of the pavement joint adhesive. Prior to applying the adhesive, demonstrate competence in applying the adhesive according to this note to the satisfaction of the Engineer. Heat the adhesive in the melter kettle to the specified temperature range. Pump the adhesive from the melter kettle through the wand onto the vertical face of the cold joint. Apply the adhesive in a continuous band over the entire face of the longitudinal joint. Do not use excessive material in either thickness or location. Ensure the edge of the extruded adhesive material is flush with the surface of the pavement. Then, place and compact the adjacent lane against the joint face. Remove any excessive material extruded from the joint after compaction (a small line of material may remain).

3.3 Pavement Joint Adhesive Certification. Furnish the joint adhesive's certification to the Engineer stating the material conforms to all requirements herein prior to use.

3.4 Sampling and Testing. The Department will require a random sample of pavement joint adhesive from each manufacturer's lot of material. Extrude two 5 lb. samples of the heated material and forward the sample to the Division of Materials for testing. Reynolds oven bags, turkey size, placed inside small cardboard boxes or cement cylinder molds have been found suitable. Ensure the product temperature is 400°F or below at the time of sampling.

4. MEASUREMENT. The Department will measure the quantity of Pavement Joint Adhesive in linear feet. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of Pavement Joint Adhesive, the cleaning of the joint face, or furnishing and placing the adhesive. The Department will consider all such items incidental to the Pavement Joint Adhesive.

5. PAYMENT. The Department will pay for the Pavement Joint Adhesive at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

Pavement Joint Adhesive Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Joint Adhesive Referenced in Subsection 2.1.1						
Viscosity, 400 º F (Pa•s)			3.0-3.4	2.5-2.9	2.0-2.4	≤1.9
ASTM D 3236	4.0-10.0	3.5-10.5	10.6-11.0	11.1-11.5	11.6-12.0	≥ 12.1
Cone Penetration, 77 º F			54-56	51-53	48-50	≤ 47
ASTM D 5329	60-100	57-103	104-106	107-109	110-112	≥ 113
Flow, 140 º F (mm) ASTM D 5329	≤ 5.0	≤ 5.5	5.6-6.0	6.1-6.5	6.6-7.0	≥ 7.1
Resilience, 77 º F (%) ASTM D 5329	≥ 30	≥ 28	26-27	24-25	22-23	≤ 21
Tensile Adhesion, 77 º F (%) ASTM D 5329	≥ 500	≥ 490	480-489	470-479	460-469	≤ 459
Softening Point, º F AASHTO T 53	≥ 171	≥ 169	166-168	163-165	160-162	≤ 159
Ductility, 77 º F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9
Ductility, 39 º F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9

Code	Pay Item	Pay Unit
20071EC	Joint Adhesive	Linear Foot

August 19, 2013

SPECIAL PROVISION FOR EMBANKMENT AT BRIDGE END BENT STRUCTURES

This Special Provision will apply when indicated on the plans or in the proposal. Section references herein are to the Department's 2012 Standard Specifications for Road and Bridge Construction.

1.0 DESCRIPTION. Construct a soil, granular, or rock embankment with granular or cohesive pile core and place structure granular backfill, as the Plans require. Construct the embankment according to the requirements of this Special Provision, the Plans, Standard Drawing RGX 100 and 105, and the 2012 Standard Specifications.

2.0 MATERIALS.

2.1 Granular Embankment. Conform to Subsection 805.10. When Granular Embankment materials are erodible or unstable according to Subsection 805.03.04, use the Special Construction Methods found in 3.2 of the Special Provision.

2.2 Rock Embankment. Provide durable rock from roadway excavation that consists principally of Unweathered Limestone, Durable Shale (SDI equal to or greater than 95 according to KM 64-513), or Durable Sandstone.

2.3 Granular Pile Core. Select a gradation of durable rock to facilitate pile driving that conforms to Subsection 805.11. If granular pile core material hinders pile driving operations, take appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

2.4 Cohesive Pile Core. Conform to Section 206 of the Standard Specifications and use soil with at least 50 percent passing a No. 4 sieve having a minimum Plasticity Index (PI) of 10. In addition, keep the cohesive pile core free of boulders, larger than 6 inches in any dimension, or any other obstructions, which would interfere with drilling operations. If cohesive pile core material interferes with drilling operations, take appropriate means necessary to maintain excavation stability, at no expense to the Department.

2.5 Structure Granular Backfill. Conform to Subsection 805.11

2.6 Geotextile Fabric. Conform to Type I or Type IV in Section 214 and 843 as required in the plans.

3.0 CONSTRUCTION.

3.1 General. Construct roadway embankments at end bents according to Section 206 and in accordance with the Special Provision, the Plans, and Standard Drawings for the full embankment section. In some instances, granular or rock embankment will be required for embankment construction for stability purposes, but this special provision does not prevent the use of soil when appropriate. Refer to the plans for specific details regarding material requirements for embankment construction.

Place and compact granular or cohesive pile core, soil, granular or rock embankment, and structure granular backfill according to the applicable density requirements for the project. When constructing granular or rock embankments, use granular pile core for driven pile foundations and use cohesive pile core for pre-drilled pile or drilled shaft foundations. Place geotextile fabric, Type IV between cohesive pile core and structure

granular backfill and granular or rock embankment.

When granular or rock embankment is required for embankment construction, conform to the general requirements of Subsection 206.03.02 B). In addition, place the material in no greater than 2-foot lifts and compact with a vibrating smooth wheel roller capable of producing a minimum centrifugal force of 15 tons. Apply these requirements to the full width of the embankment for a distance of half the embankment height or 50 feet, whichever is greater, as shown on Standard Drawing RGX-105.

When using granular pile core, install 8-inch perforated underdrain pipe at or near the elevation of the original ground in the approximate locations depicted on the standard drawing, and as the Engineer directs, to ensure positive drainage of the embankment. Wrap the perforated pipe with a fabric of a type recommended by the pipe manufacturer.

After constructing the embankment, excavate for the end bent cap, drive piling or install shafts, place the mortar bed, construct the end bent, and complete the embankment to finish grade according to the construction sequence shown on the Plans or Standard Drawings and as specified hereinafter.

Certain projects may require widening of existing embankments and the removal of substructures. Construct embankment according to the plans. Substructure removal shall be completed according to the plans and Section 203. Excavation may be required at the existing embankment in order to place the structure granular backfill as shown in the Standard Drawings.

After piles are driven or shafts installed (see design drawings), slope the bottom of the excavation towards the ends of the trench as noted on the plans for drainage. Using a separate pour, place concrete mortar, or any class concrete, to provide a base for forming and placing the cap. Place side forms for the end bent after the mortar has set sufficiently to support workmen and forms without being disturbed.

Install 4-inch perforated pipe in accordance with the plans and Standard Drawings. In the event slope protection extends above the elevation of the perforated pipe, extend the pipe through the slope protection.

After placing the end bent cap and removing adjacent forms, fill the excavation with structure granular backfill material to the level of the berm prior to placing beams for the bridge. For soil embankments, place Type IV geotextile fabric between embankment material and structure granular backfill. After completing the end bent backwall, or after completing the span end wall, place the structure granular backfill to subgrade elevation. If the original excavation is enlarged, fill the entire volume with compacted structure granular backfill at no expense to the Department. Do not place backfill before removing adjacent form work. Place structure granular backfill material in trench ditches at the ends of the excavation. Place Geotextile Fabric, Type IV over the surface of structure granular backfill prior to placing aggregate base course.

Tamp the backfill with hand tampers, pneumatic tampers, or other means the Engineer approves. Thoroughly compact the backfill under the overhanging portions of the structure to ensure that the backfill is in intimate contact with the sides of the structure.

Do not apply seeding, sodding, or other vegetation to the exposed granular embankment.

3.2 Special Construction Methods. Erodible or unstable materials may erode even when protected by riprap or channel lining; use the special construction method described below when using these materials.

Use fine aggregates or friable sandstone granular embankment at “dry land” structures only. Do not use them at stream crossings or locations subject to flood waters.

For erodible or unstable materials having 50 percent or more passing the No. 4 sieve, protect with geotextile fabric. Extend the fabric from the original ground to the top of slope over the entire area of the embankment slopes on each side of, and in front of, the

end bent. Cover the fabric with at least 12 inches of non-erodible material.

For erodible or unstable materials having less than 50 percent passing a No. 4 sieve, cover with at least 12 inches of non-erodible material.

Where erodible or unstable granular embankment will be protected by riprap or channel lining, place geotextile fabric between the embankment and the specified slope protection.

4.0 MEASUREMENT.

4.1 Granular Embankment. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure for payment any Granular Embankment that is not called for in the plans.

The Department will not measure for payment any special construction caused by using erodible or unstable materials and will consider it incidental to the Granular Embankment regardless of whether the erodible or unstable material was specified or permitted.

4.2 Rock Embankment. The Department will not measure for payment any rock embankment and will consider it incidental to roadway excavation or embankment in place, as applicable. Rock embankments will be constructed using granular embankment on projects where there is no available rock present within the excavation limits of the project.

4.3 Granular Pile Core. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure for payment furnishing and placing 8-inch perforated underdrain pipe and will consider it incidental to the Granular pile core. The Department will not measure for payment any granular pile core that is necessary because the contractor elects to use granular or rock embankment when it is not specified in the plans.

4.4 Cohesive Pile Core. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204.

4.5 Structure Granular Backfill. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure any additional material required for backfill outside the limits shown on the Plans and Standard Drawings for payment and will consider it incidental to the work.

The Department will not measure structure excavation at the end bent or an existing embankment for payment and will consider it incidental to Structure Granular Backfill.

The Department will not measure for payment the 4-inch perforated underdrain pipe and will consider it incidental to the Structure Granular Backfill.

4.6 Geotextile Fabric. The Department will measure the quantities as specified in Section 214. The Department will not measure the quantity of fabric used for separating granular or rock embankment and cohesive pile core and will consider it incidental to cohesive pile core.

4.7 End Bent. The Department will measure the quantities according to the

Contract. The Department will not measure furnishing and placing the 2-inch mortar or concrete bed for payment and will consider it incidental to the end bent construction.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

Code	Pay Item	Pay Unit
02223	Granular Embankment	Cubic Yards
20209EP69	Granular Pile Core	Cubic Yards
20210EP69	Cohesive Pile Core	Cubic Yards
02231	Structure Granular Backfill	Cubic Yards
02596, 02599	Geotextile Fabric, Type	See Section 214

The Department will consider payment as full compensation for all work required in this provision.

June 15, 2012

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

EMPLOYMENT REQUIREMENTS
RELATING TO
NONDISCRIMINATION OF EMPLOYEES
(APPLICABLE TO FEDERAL-AID SYSTEM CONTRACTS)

AN ACT OF THE KENTUCKY GENERAL ASSEMBLY TO PREVENT DISCRIMINATION IN EMPLOYMENT

KRS CHAPTER 344
EFFECTIVE JUNE 16, 1972

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age (between forty and seventy). The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, disability or age (between forty and seventy), except that such notice or advertisement may indicate a preference, limitation, or specification based on religion, or national origin when religion, or national origin is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age (between forty and seventy), in admission to, or employment in any program established to provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administrating agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

REVISED: 12-3-92

Standard Title VI/Non-Discrimination Assurances

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **Federal Highway Administration** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **Federal Highway Administration**, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **Federal Highway Administration** may determine to be appropriate, including, but not limited to:

    a. withholding payments to the contractor under the contract until the contractor complies; and/or
    b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **Federal Highway Administration** may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Standard Title VI/Non-Discrimination Statutes and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq*., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq*.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq*.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq*.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (6) provides:

No present or former public servant shall, within six (6) months of following termination of his office or employment, accept employment, compensation or other economic benefit from any person or business that contracts or does business with the state in matters in which he was directly involved during his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved in state government. This subsection shall not prohibit the performance of ministerial functions, including, but not limited to, filing tax returns, filing applications for permits or licenses, or filing incorporation papers.

KRS 11A.040 (8) states:

A former public servant shall not represent a person in a matter before a state agency in which the former public servant was directly involved, for a period of one (1) year after the latter of:

a) The date of leaving office or termination of employment; or
b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, Room 136, Capitol Building, 700 Capitol Avenue, Frankfort, Kentucky 40601; telephone (502) 564-7954.

KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

TRAINING SPECIAL PROVISIONS

This Training Special Provision supersedes subparagraph 7b of the Special Provision entitled ``Specific Equal Employment Opportunity Responsibilities," (Attachment 1), and is in implementation of 23 U.S.C. 140(a).

As part of the contractor's equal employment opportunity affirmative action program training shall be provided as follows:

The contractor shall provide on-the-job training aimed at developing full journeymen in the type of trade or job classification involved.

The number of trainees to be trained under these special provisions and in this contract is shown in “Special Notes Applicable to Project” in the bid proposal.

In the event that a contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment. Prior to commencing construction the contractor shall submit to the Kentucky Transportation Cabinet, Department of Highways for its approval, an acceptable training program on forms provided by the Cabinet indicating the number of trainees to be trained in each selected classification. Failure to provide the Cabinet with the proper documentation evidencing an acceptable training program prior to commencing construction shall cause the Cabinet to suspend the operations of the contractor with (if applicable) working days being charged as usual against the contract time or (if applicable), no additional contract time being granted for the suspension period. The Cabinet will not be liable for the payment of any work performed during the suspension period due to the failure of the contractor to provide an acceptable training program. Said suspension period shall be terminated when an acceptable training program is received by the Cabinet. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeymen status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case. The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the Kentucky Transportation Cabinet, Department of Highways and the Federal Highway Administration shall approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the division office. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the contractor will be reimbursed for each hour of training given an employee on this contract in accordance with an approved training program. As approved by the engineer, reimbursement will be made for training persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program. It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

1-1-93

General Decision Number: KY150102 05/08/2015 KY102

Superseded General Decision Number: KY20140102

State: Kentucky

Construction Type: Highway

Counties: Allen, Ballard, Butler, Caldwell, Calloway, Carlisle, Christian, Crittenden, Daviess, Edmonson, Fulton, Graves, Hancock, Henderson, Hickman, Hopkins, Livingston, Logan, Lyon, Marshall, McCracken, McLean, Muhlenberg, Ohio, Simpson, Todd, Trigg, Union, Warren and Webster Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of $10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/02/2015
1	01/30/2015
2	02/20/2015
3	02/27/2015
4	03/06/2015
5	03/20/2015
6	03/27/2015
7	05/01/2015
8	05/08/2015

BRIN0004-002 06/01/2014

BALLARD, BUTLER, CALDWELL, CARLISLE, CRITTENDEN, DAVIESS, EDMONSON, FULTON, GRAVES, HANCOCK, HENDERSON, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, MCCRACKEN, MCLEAN, MUHLENBERG, OHIO, UNION, and WEBSTER COUNTIES

	Rates	Fringes
BRICKLAYER		
Ballard, Caldwell, Carlisle, Crittenden,		

Fulton, Graves, Hickman,
Livingston, Lyon,
Marshall, and McCracken
Counties.....$ 29.52 13.37
Butler, Edmonson, Hopkins,
Muhlenberg, and Ohio
Counties.....$ 24.61 10.22
Daviess, Hancock,
Henderson, McLean, Union,
and Webster Counties.....$ 28.68 13.72

BRTN0004-005 06/01/2014

ALLEN, CALLOWAY, CHRISTIAN, LOGAN, SIMPSON, TODD, TRIGG, and WARREN COUNTIES

	Rates	Fringes
BRICKLAYER	$ 25.37	10.50

CARP0357-002 04/01/2014

	Rates	Fringes
CARPENTER	$ 27.50	14.92
Diver	$ 41.63	14.92
PILEDRIVERMAN	$ 27.75	14.92

ELEC0369-006 05/28/2014

BUTLER, EDMONSON, LOGAN, TODD & WARREN COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 29.88	14.78

ELEC0429-001 06/01/2014

ALLEN & SIMPSON COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 24.44	10.15 + 5%

ELEC0816-002 06/01/2014

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON (Except a 5 mile radius of City Hall in Fulton), GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 30.82	25.5%+5.85

Cable spicers receive $.25 per hour additional.

ELEC1701-003 01/01/2015

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO, UNION & WEBSTER COUNTIES:

	Rates	Fringes
ELECTRICIAN	$ 30.15	14.69

Cable spicers receive $.25 per hour additional.

ELEC1925-002 01/01/2015

FULTON COUNTY (Up to a 5 mile radius of City Hall in Fulton):

	Rates	Fringes
CABLE SPLICER	$ 25.00	10.27
ELECTRICIAN	$ 24.55	11.51

ENGI0181-017 07/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 28.85	14.15
GROUP 2	$ 26.24	14.15
GROUP 3	$ 26.65	14.15
GROUP 4	$ 25.95	14.15

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - A-Frame Winch Truck; Auto Patrol; Backfiller; Batcher Plant; Bituminous Paver; Bituminous Transfer Machine; Boom Cat; Bulldozer; Mechanic; Cableway; Carry-All Scoop; Carry Deck Crane; Central Compressor Plant; Cherry Picker; Clamshell; Concrete Mixer (21 cu. ft. or Over); Concrete Paver; Truck-Mounted Concrete Pump; Core Drill; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loaders; Grade-All; Gurries; Heavy Equipment Robotics Operator/Mechanic; High Lift; Hoe-Type Machine; Hoist (Two or More Drums); Hoisting Engine (Two or More Drums); Horizontal Directional Drill Operator; Hydrocrane; Hyster; KeCal Loader; LeTourneau; Locomotive; Mechanic; Mechanically Operated Laser Screed; Mechanic Welder; Mucking Machine; Motor Scraper; Orangepeel Bucket; Overhead Crane; Piledriver; Power Blade; Pumpcrete; Push Dozer; Rock Spreader, attached to equipment; Rotary Drill; Roller (Bituminous); Rough Terrain Crane; Scarifier; Scoopmobile; Shovel; Side Boom; Subgrader; Tailboom; Telescoping Type Forklift; Tow or Push Boat; Tower Crane (French, German & other types); Tractor Shovel; Truck Crane; Tunnel Mining Machines, including Moles, Shields or similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (Over 900 cu. ft. per min.); Bituminous Mixer; Boom Type Tamping Machine; Bull Float; Concrete Mixer (Under 21 cu. ft.); Dredge Engineer; Electric Vibrator; Compactor/Self-Propelled Compactor; Elevator (One Drum or Buck Hoist); Elevator (When used to

Hoist Building Material); Finish Machine; Firemen & Hoist (One Drum); Flexplane; Forklift (Regardless of Lift Height); Form Grader; Joint Sealing Machine; Outboard Motor Boat; Power Sweeper (Riding Type); Roller (Rock); Ross Carrier; Skid Mounted or Trailer Mounted Conrete Pump; Skid Steer Machine with all Attachments; Switchman or Brakeman; Throttle Valve Person; Tractair & Road Widening Trencher; Tractor (50 H.P. or Over); Truck Crane Oiler; Tugger; Welding Machine; Well Points;& Whirley Oiler

GROUP 3 -All Off Road Material Handling Equipment, including Articulating Dump Trucks; Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4 - Bituminous Distributor; Burlap & Curing Machine; Cement Gun; Concrete Saw; Conveyor; Deckhand Oiler; Grout Pump; Hydraulic Post Driver; Hydro Seeder; Mud Jack; Oiler; Paving Joint Machine; Power Form Handling Equipment; Pump; Roller (Earth); Steerman; Tamping Machine; Tractor (Under 50 H.P.); & Vibrator

CRANES - with booms 150 ft. & Over (Including JIB), and where the length of the boom in combination with the length of the piling equals or exceeds 150 ft. - $1.00 above Group 1 rate

EMPLOYEES ASSIGNED TO WORK BELOW GROUND LEVEL ARE TO BE PAID 10% ABOVE BASIC WAGE RATE. THIS DOES NOT APPLY TO OPEN CUT WORK.

IRON0070-005 06/01/2014

BUTLER COUNTY (Eastern eighth, including the Townships of Decker, Lee & Tilford);
EDMONSON COUNTY (Northern three-fourths, including the Townships of Asphalt, Bee Spring, Brownsville, Grassland, Huff, Kyrock, Lindseyville, Mammoth Cave, Ollie, Prosperity, Rhoda, Sunfish & Sweden)

	Rates	Fringes
IRONWORKER		
Structural; Ornamental; Reinforcing; Precast Concrete Erectors	$ 26.97	19.75

IRON0103-004 04/01/2014

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, OHIO, UNION & WEBSTER COUNTIES
BUTLER COUNTY (Townships of Aberdeen, Bancock, Casey, Dexterville, Dunbar, Elfie, Gilstrap, Huntsville, Logansport, Monford, Morgantown, Provo, Rochester, South Hill & Welchs Creek);
CALDWELL COUNTY (Northeastern third, including the Township of Creswell);
CHRISTIAN COUNTY (Northern third, including the Townships of Apex, Crofton, Kelly, Mannington & Wynns);

CRITTENDEN COUNTY (Northeastern half, including the Townships of Grove, Mattoon, Repton, Shady Grove & Tribune);
MUHLENBERG COUNTY (Townships of Bavier, Beech Creek Junction, Benton, Brennen, Browder, Central City, Cleaton, Depoy, Drakesboro, Eunis, Graham, Hillside, Luzerne, Lynn City, Martwick, McNary, Millport, Moorman, Nelson, Paradise, Powderly, South Carrollton, Tarina & Weir)

	Rates	Fringes
Ironworkers:	$ 27.82	17.355

IRON0492-003 05/01/2014

ALLEN, LOGAN, SIMPSON, TODD & WARREN COUNTIES
BUTLER COUNTY (Southern third, including the Townships of Boston, Berrys Lick, Dimple, Jetson, Quality, Sharer, Sugar Grove & Woodbury);
CHRISTIAN COUNTY (Eastern two-thirds, including the Townships of Bennettstown, Casky, Herndon, Hopkinsville, Howell, Masonville, Pembroke & Thompsonville);
EDMONSON COUNTY (Southern fourth, including the Townships of Chalybeate & Rocky Hill);
MUHLENBERG COUNTY (Southern eighth, including the Townships of Dunnior, Penrod & Rosewood)

	Rates	Fringes
Ironworkers:	$ 24.33	11.48

IRON0782-006 05/01/2014

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES
CALDWELL COUNTY (Southwestern two-thirds, including the Townships of Cedar Bluff, Cider, Claxton, Cobb, Crowtown, Dulaney, Farmersville, Fredonia, McGowan, Otter Pond & Princeton);
CHRISTIAN COUNTY (Western third, Excluding the Townships of Apex, Crofton, Kelly, Mannington, Wynns, Bennettstown, Casky, Herndon, Hopkinsville, Howell, Masonville, Pembroke & Thompsonville);
CRITTENDEN COUNTY (Southwestern half, including the Townships of Crayne, Dycusburg, Frances, Marion, Mexico, Midway, Sheridan & Told)

	Rates	Fringes
Ironworkers:		
Projects with a total contract cost of $20,000,000.00 or above	$ 27.09	20.66
All Other Work	$ 25.50	19.02

LABO0189-005 07/01/2014

BALLARD, CALLOWAY, CARLISLE, FULTON, GRAVES, HICKMAN,

LIVINGSTON, LYON, MARSHALL & MCCRACKEN COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 21.50	12.26
GROUP 2	$ 21.75	12.26
GROUP 3	$ 21.80	12.26
GROUP 4	$ 22.40	12.26

LABORER CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Blaster; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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LABO0189-006 07/01/2014

ALLEN, BUTLER, CALDWELL, CHRISTIAN, DAVIESS, EDMONSON, HANCOCK, HOPKINS, LOGAN, MCLEAN, MUHLENBERG, OHIO, SIMPSON, TODD, TRIGG & WARREN COUNTIES

	Rates	Fringes

Laborers:

GROUP 1	$ 22.66	11.10
GROUP 2	$ 22.91	11.10
GROUP 3	$ 22.96	11.10
GROUP 4	$ 23.56	11.10

LABORER CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Blaster; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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LABO0561-001 07/01/2014

CRITTENDEN, HENDERSON, UNION & WEBSTER COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1	$ 21.36	12.65
GROUP 2	$ 21.61	12.65
GROUP 3	$ 21.66	12.65
GROUP 4	$ 22.26	12.65

LABORER CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Blaster; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

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PAIN0032-002 05/01/2014

BALLARD COUNTY

	Rates	Fringes
Painters:		
Bridges	$ 31.56	15.18
All Other Work	$ 29.26	15.18

Spray, Blast, Steam, High & Hazardous (Including Lead Abatement) and All Epoxy - $1.00 Premium

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PAIN0118-003 06/01/2014

EDMONSON COUNTY:

	Rates	Fringes

Painters:		
Brush & Roller	$ 18.50	11.97
Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning	$ 19.50	11.97

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* PAIN0156-006 04/01/2015

DAVIESS, HANCOCK, HENDERSON, MCLEAN, OHIO, UNION & WEBSTER COUNTIES

	Rates	Fringes
Painters:		
BRIDGES		
GROUP 1	$ 27.60	12.85
GROUP 2	$ 27.85	12.85
GROUP 3	$ 28.60	12.85
GROUP 4	$ 29.60	12.85
ALL OTHER WORK:		
GROUP 1	$ 26.45	12.85
GROUP 2	$ 26.70	12.85
GROUP 3	$ 27.45	12.85
GROUP 4	$ 28.45	12.85

PAINTER CLASSIFICATIONS

GROUP 1 - Brush & Roller

GROUP 2 - Plasterers

GROUP 3 - Spray; Sandblast; Power Tools; Waterblast; Steamcleaning; Brush & Roller of Mastics, Creosotes, Kwinch Koate & Coal Tar Epoxy

GROUP 4 - Spray of Mastics, Creosotes, Kwinch Koate & Coal Tar Epoxy

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PAIN0456-003 01/01/2015

ALLEN, BUTLER, LOGAN, MUHLENBERG, SIMPSON, TODD & WARREN COUNTIES:

	Rates	Fringes
Painters:		
BRIDGES		
Brush & Roller	$ 23.25	9.95
Spray; Sandblast; Power Tools; Waterblast & Steam Cleaning	$ 24.25	9.95
ALL OTHER WORK		
Brush & Roller	$ 19.25	9.95
Spray; Sandblast; Power Tools; Waterblast & Steam Cleaning	$ 20.25	9.95

ALL OTHER WORK - HIGH TIME PAY
Over 35 feet (up to 100 feet) - $1.00 above base wage
100 feet and over - $2.00 above base wage

DURING SPRAY PAINTING AND SANDBLASTING OPERATIONS, POT TENDERS SHALL RECEIVE THE SAME WAGE RATES AS THE SPRAY PAINTER OR NOZZLE OPERATOR

PAIN0500-002 06/01/2014

CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, HOPKINS, LIVINGSTON, LYON, MARSHALL, MCCRACKEN & TRIGG COUNTIES:

	Rates	Fringes
Painters:		
Bridges	$ 26.55	11.85
All Other Work	$ 20.30	11.85

Waterblasting units with 3500 PSI and above - $.50 premium
Spraypainting and all abrasive blasting - $1.00 premium
Work 40 ft. and above ground level - $1.00 premium

PLUM0184-002 07/01/2013

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL, MCCRACKEN and TRIGG COUNTIES

	Rates	Fringes
Plumber; Steamfitter	$ 33.11	14.83

PLUM0502-004 08/01/2013

ALLEN, BUTLER, EDMONSON, SIMPSON & WARREN

	Rates	Fringes
Plumber; Steamfitter	$ 32.00	17.17

PLUM0633-002 08/01/2013

DAVIESS, HANCOCK, HENDERSON, HOPKINS, LOGAN, MCLEAN, MUHLENBERG, OHIO, TODD, UNION & WEBSTER COUNTIES:

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 29.87	14.25

TEAM0089-003 03/30/2014

ALLEN, BUTLER, EDMONSON, LOGAN, SIMPSON & WARREN COUNTIES

	Rates	Fringes
Truck drivers:		
Zone 1:		
Group 1	$ 19.58	17.83
Group 2	$ 19.76	17.83
Group 3	$ 19.84	17.83
Group 4	$ 19.86	17.83

GROUP 1 - Greaser; Tire Changer

GROUP 2 - Truck Mechanic; Single Axle Dump; Flat Bed; All Terrain Vehicles when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Driver of Distributors

GROUP 3 - Mixer All Types

GROUP 4 - Winch and A-Frame when used in transporting materials; Ross Carrier; Fork Lift when used to transport building materials; Driver on Pavement Breaker; Euclid and Other Heavy Earth Moving Equipment; Low Boy; Articulator Cat; Five Axle Vehicle

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TEAM0215-003 03/31/2013

DAVIESS, HANCOCK, HENDERSON, HOPKINS, MCLEAN, MUHLENBERG, OHIO & WEBSTER COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 20.93	16.85
Group 2	$ 21.16	16.85
Group 3	$ 21.23	16.85
Group 4	$ 21.24	16.85

GROUP 1: Greaser, Tire Changer

GROUP 2: Truck Mechanic

GROUP 3: Single Axle Dump; Flat Bed; All Terrain Vehicle when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Driver of Distributors; Mixer All Types

GROUP 4: Euclid and other heavy earth moving equipment; Low Boy; Articulator Cat; 5 Axle Vehicle; Winch and A- Frame when used in transporting materials; Ross Carrier; Fork Lift when used to transport building materials; Driver on Pavement Breaker

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TEAM0236-001 03/31/2013

BALLARD, CALDWELL, CALLOWAY, CARLISLE, CHRISTIAN, CRITTENDEN, FULTON, GRAVES, HICKMAN, LIVINGSTON, LYON, MARSHALL,

MCCRACKEN,TODD & TRIGG COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 19.38	16.85
Group 2	$ 19.56	16.85
Group 3	$ 19.56	16.85
Group 4	$ 19.66	16.85
Group 5	$ 19.64	16.85

GROUP 1: Greaser, Tire Changer

GROUP 2: Truck Mechanic

GROUP 3: Single Axle Dump; Flat Bed; All Terrain Vehicle when used to haul materials; Semi Trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Drivers of Distributors

GROUP 4: Euclid and other heavy earth moving equipment; Low Boy; Articulator Cat; Five Axle Vehicle; Winch and A-Frame when used in transporting materials; Ross Carrier

GROUP 5: Mixer All Types

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of

the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination

* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

These rates are listed pursuant to the Kentucky Determination No. CR-14-I-HWY dated July 14, 2014.

No laborer, workman or mechanic shall be paid at a rate less than that of a Journeyman except those classified as bona fide apprentices.

Apprentices or trainees shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request from any interested person.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U. S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U. S. Bureau of Apprenticeship and Training.

The contractor shall submit to the Contracting Officer, written evidence of the established apprenticeship-journeyman ratios and wage rates in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

TO: EMPLOYERS/EMPLOYEES

PREVAILING WAGE SCHEDULE:

The wages indicated on this wage schedule are the least permitted to be paid for the occupations indicated. When an employee works in more than one classification, the employer must record the number of hours worked in each classification at the prescribed hourly base rate.

OVERTIME:

Overtime is to be paid after an employee works eight (8) hours a day or forty (40) hours a week, whichever gives the employee the greater wages. At least time and one-half the base rate is required for all overtime. A laborer, workman or mechanic and an employer may enter into a written agreement or a collective bargaining agreement to work more than eight (8) hours a calendar day but not more than ten (10) hours a calendar day for the straight time hourly rate. Wage violations or questions should be directed to the designated Engineer or the undersigned.

Diana Castle Radcliffe, P.E.
Director, Division of Construction Procurement
Frankfort, Kentucky 40622

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (Executive Order 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

GOALS FOR MINORITY PARTICIPATION IN EACH TRADE	GOALS FOR FEMALE PARTICIPATION IN EACH TRADE
3.5%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally-assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4, 3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of $10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed. The notification shall be mailed to:

Evelyn Teague, Regional Director
Office of Federal Contract Compliance Programs
61 Forsyth Street, SW, Suite 7B75
Atlanta, Georgia 30303-8609

4. As used in this Notice, and in the contract resulting from this solicitation, the **"covered area"** is Hopkins County.

PART IV

INSURANCE

INSURANCE

The Contractor shall procure and maintain the following insurance in addition to the insurance required by law:

1) Commercial General Liability-Occurrence form – not less than $2,000,000 General aggregate, $2,000,000 Products & Completed Aggregate, $1,000,000 Personal & Advertising, $1,000,000 each occurrence.

2) Automobile Liability- $1,000,000 per accident

3) Employers Liability:

   a) $100,000 Each Accident Bodily Injury
   b) $500,000 Policy limit Bodily Injury by Disease
   c) $100,000 Each Employee Bodily Injury by Disease

4) The insurance required above must be evidenced by a Certificate of Insurance and this Certificate of Insurance must contain one of the following statements:
   a) "policy contains no deductible clauses."
   b) "policy contains _____ (amount) deductible property damage clause but company will pay claim and collect the deductible from the insured."

5) KENTUCKY WORKMEN'S COMPENSATION INSURANCE. The contractor shall furnish evidence of coverage of all his employees or give evidence of self-insurance by submitting a copy of a certificate issued by the Workmen's Compensation Board.

The cost of insurance is incidental to all contract items. All subcontractors must meet the same minimum insurance requirements.

PART V

BID ITEMS

PROPOSAL BID ITEMS

151220

Report Date 5/6/15

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	14,566.00	TON		$	
0020	00003		CRUSHED STONE BASE	1,298.00	TON		$	
0030	00018		DRAINAGE BLANKET-TYPE II-ASPH	9,396.00	TON		$	
0040	00100		ASPHALT SEAL AGGREGATE	131.00	TON		$	
0050	00103		ASPHALT SEAL COAT	16.00	TON		$	
0060	00214		CL3 ASPH BASE 1.00D PG64-22	9,384.00	TON		$	
0070	00217		CL4 ASPH BASE 1.00D PG64-22	10,095.00	TON		$	
0080	00219		CL4 ASPH BASE 1.00D PG76-22	4,752.00	TON		$	
0090	00263		ASPHALT MIX FOR PAVEMENT WEDGE	16,955.00	TON		$	
0100	00324		CL3 ASPH SURF 0.50B PG64-22	1,438.00	TON		$	
0110	00335		CL4 ASPH SURF 0.50A PG76-22	3,259.00	TON		$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0780	00071		CRUSHED AGGREGATE SIZE NO 57	933.00	TON		$	
0790	00078		CRUSHED AGGREGATE SIZE NO 2	32,413.00	TON		$	
0800	01891		ISLAND HEADER CURB TYPE 2	50.00	LF		$	
0810	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	23.00	EACH		$	
0820	01983		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	13.00	EACH		$	
0830	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	12.00	EACH		$	
0840	02014		BARRICADE-TYPE III	8.00	EACH		$	
0850	02091		REMOVE PAVEMENT	1,275.00	SQYD		$	
0860	02159		TEMP DITCH	4,000.00	LF		$	
0870	02160		CLEAN TEMP DITCH	4,000.00	LF		$	
0880	02230		EMBANKMENT IN PLACE	133,174.00	CUYD		$	
0890	02242		WATER (FOR DUST CONTROL)	594.00	MGAL		$	
0900	02262		FENCE-WOVEN WIRE TYPE 1	4,743.00	LF		$	
0910	02351		GUARDRAIL-STEEL W BEAM-S FACE	4,849.50	LF		$	
0920	02360		GUARDRAIL TERMINAL SECTION NO 1	1.00	EACH		$	
0930	02363		GUARDRAIL CONNECTOR TO BRIDGE END TY A	10.00	EACH		$	
0940	02367		GUARDRAIL END TREATMENT TYPE 1	7.00	EACH		$	
0950	02369		GUARDRAIL END TREATMENT TYPE 2A	6.00	EACH		$	
0960	02381		REMOVE GUARDRAIL	4,725.00	LF		$	
0970	02387		GUARDRAIL CONNECTOR TO BRIDGE END TY A-1	3.00	EACH		$	
0980	02429		RIGHT-OF-WAY MONUMENT TYPE 1	15.00	EACH		$	
0990	02432		WITNESS POST	15.00	EACH		$	
1000	02545		CLEARING AND GRUBBING (APPROXIMATELY 54.6 ACRES)	1.00	LS		$	
1010	02562		TEMPORARY SIGNS	900.00	SQFT		$	
1020	02585		EDGE KEY	284.00	LF		$	
1030	02599		FABRIC-GEOTEXTILE TYPE IV	56,190.00	SQYD		$	

PROPOSAL BID ITEMS

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1040	02600		FABRIC GEOTEXTILE TY IV FOR PIPE	4,370.00	SQYD	$2.00	$	$8,740.00
1050	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		$	
1060	02651		DIVERSIONS (BY-PASS DETOURS)	1.00	LS		$	
1070	02653		LANE CLOSURE	6.00	EACH		$	
1080	02671		PORTABLE CHANGEABLE MESSAGE SIGN	2.00	EACH		$	
1090	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		$	
1100	02677		ASPHALT PAVE MILLING & TEXTURING	1,226.00	TON		$	
1110	02696		SHOULDER RUMBLE STRIPS-SAWED	22,363.00	LF		$	
1120	02701		TEMP SILT FENCE	10,000.00	LF		$	
1130	02703		SILT TRAP TYPE A	5.00	EACH		$	
1140	02704		SILT TRAP TYPE B	50.00	EACH		$	
1150	02705		SILT TRAP TYPE C	20.00	EACH		$	
1160	02706		CLEAN SILT TRAP TYPE A	10.00	EACH		$	
1170	02707		CLEAN SILT TRAP TYPE B	150.00	EACH		$	
1180	02708		CLEAN SILT TRAP TYPE C	60.00	EACH		$	
1190	02709		CLEAN TEMP SILT FENCE	10,000.00	LF		$	
1200	02726		STAKING	1.00	LS		$	
1210	02731		REMOVE STRUCTURE (EXISTING BRIDGE CR 1152, TRUCK STOP ENTRANCE)	1.00	LS		$	
1220	02775		ARROW PANEL	2.00	EACH		$	
1230	02929		CRASH CUSHION TYPE IX	3.00	EACH		$	
1240	05950		EROSION CONTROL BLANKET	20,400.00	SQYD		$	
1250	05952		TEMP MULCH	100,000.00	SQYD		$	
1260	05953		TEMP SEEDING AND PROTECTION	100,000.00	SQYD		$	
1270	05963		INITIAL FERTILIZER	7.00	TON		$	
1280	05964		20-10-10 FERTILIZER	1.30	TON		$	
1290	05985		SEEDING AND PROTECTION	199,400.00	SQYD		$	
1300	05989		SPECIAL SEEDING CROWN VETCH	20,400.00	SQYD		$	
1310	05992		AGRICULTURAL LIMESTONE	139.00	TON		$	
1320	06401		FLEXIBLE DELINEATOR POST-M/W	136.00	EACH		$	
1330	06404		FLEXIBLE DELINEATOR POST-M/Y	45.00	EACH		$	
1340	06510		PAVE STRIPING-TEMP PAINT-4 IN	27,500.00	LF		$	
1350	06514		PAVE STRIPING-PERM PAINT-4 IN	14,929.00	LF		$	
1360	06515		PAVE STRIPING-PERM PAINT-6 IN	15,067.00	LF		$	
1370	06546		PAVE STRIPING-THERMO-12 IN W	1,049.00	LF		$	
1380	06550		PAVE STRIPING-TEMP REM TAPE-W	1,500.00	LF		$	
1390	06551		PAVE STRIPING-TEMP REM TAPE-Y	1,500.00	LF		$	
1400	06568		PAVE MARKING-THERMO STOP BAR-24IN	343.00	LF		$	
1410	06574		PAVE MARKING-THERMO CURV ARROW	7.00	EACH		$	
1420	06589		PAVEMENT MARKER TYPE V-MW	51.00	EACH		$	
1430	06592		PAVEMENT MARKER TYPE V-B W/R	139.00	EACH		$	
1440	06593		PAVEMENT MARKER TYPE V-B Y/R	89.00	EACH		$	
1450	06600		REMOVE PAVEMENT MARKER TYPE V	51.00	EACH		$	
1460	08100		CONCRETE-CLASS A	112.00	CUYD		$	
1470	08150		STEEL REINFORCEMENT	784.00	LB		$	
1480	10020NS		FUEL ADJUSTMENT	96,943.00	DOLL	$1.00	$	$96,943.00
1490	10030NS		ASPHALT ADJUSTMENT	104,583.00	DOLL	$1.00	$	$104,583.00
1500	20071EC		JOINT ADHESIVE	3,831.00	LF		$	
1510	20210EN		COHESIVE PILE CORE	224.00	CUYD		$	
1520	20550ND		SAWCUT PAVEMENT	6,423.00	LF		$	

PROPOSAL BID ITEMS

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1530	21289ED		LONGITUDINAL EDGE KEY	3,831.00	LF		$	
1540	23140EN		DURABLE WATERBORNE MARKING-6 IN W	1.62	MILE		$	
1550	23141EN		DURABLE WATERBORNE MARKING-6 IN Y	.77	MILE		$	
1560	23274EN11F		TURF REINFORCEMENT MAT 1	732.00	SQYD		$	
1570	24605ED		RELOCATE (CIVIL DEFENSE SIREN)	1.00	EACH		$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1580	00441		ENTRANCE PIPE-18 IN	78.00	LF		$	
1590	00461		CULVERT PIPE-15 IN	74.00	LF		$	
1600	00462		CULVERT PIPE-18 IN	254.00	LF		$	
1610	00464		CULVERT PIPE-24 IN	108.00	LF		$	
1620	00466		CULVERT PIPE-30 IN	314.00	LF		$	
1630	00469		CULVERT PIPE-42 IN	62.00	LF		$	
1640	00496		CULVERT PIPE-36 IN EQUIV	51.00	LF		$	
1650	01000		PERFORATED PIPE-4 IN	13,163.00	LF		$	
1660	01010		NON-PERFORATED PIPE-4 IN	917.00	LF		$	
1670	01020		PERF PIPE HEADWALL TY 1-4 IN	3.00	EACH		$	
1680	01028		PERF PIPE HEADWALL TY 3-4 IN	43.00	EACH		$	
1690	01202		PIPE CULVERT HEADWALL-15 IN	1.00	EACH		$	
1700	01204		PIPE CULVERT HEADWALL-18 IN	4.00	EACH		$	
1710	01208		PIPE CULVERT HEADWALL-24 IN	2.00	EACH		$	
1720	01210		PIPE CULVERT HEADWALL-30 IN	4.00	EACH		$	
1730	01213		PIPE CULVERT HEADWALL-36 IN EQUIV	2.00	EACH		$	
1740	01214		PIPE CULVERT HEADWALL-42 IN	2.00	EACH		$	
1750	01691		FLUME INLET TYPE 2	2.00	EACH		$	
1760	02483		CHANNEL LINING CLASS II	159.00	TON		$	
1770	02484		CHANNEL LINING CLASS III	35.00	TON		$	
1780	02690		SAFELOADING	28.00	CUYD		$	
1790	20758ED		REMOVE AND RESET PERF PIPE HEADWALL	5.00	EACH		$	
1800	22581EN		ENTRANCE PIPE-36 IN	38.00	LF		$	
1810	23131ER701		PIPELINE VIDEO INSPECTION	332.00	LF		$	
1820	24543EC		CLEAN (EXISTING PIPE)	544.00	LF		$	

Section: 0004 - BRIDGE - RAMP B OVER FLAT CREEK @ KY 813 - DWG. 27184

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1830	02231		STRUCTURE GRANULAR BACKFILL	211.00	CUYD		$	
1840	02998		MASONRY COATING	3,003.00	SQYD		$	
1850	03299		ARMORED EDGE FOR CONCRETE	60.80	LF		$	
1860	08001		STRUCTURE EXCAVATION-COMMON	331.00	CUYD		$	
1870	08019		CYCLOPEAN STONE RIP RAP	814.00	TON		$	
1880	08033		TEST PILES	425.00	LF		$	
1890	08046		PILES-STEEL HP12X53	473.00	LF		$	
1900	08051		PILES-STEEL HP14X89	1,942.00	LF		$	

PROPOSAL BID ITEMS

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1910	08094		PILE POINTS-12 IN	13.00	EACH		$	
1920	08095		PILE POINTS-14 IN	51.00	EACH		$	
1930	08100		CONCRETE-CLASS A	354.10	CUYD		$	
1940	08104		CONCRETE-CLASS AA	715.50	CUYD		$	
1950	08150		STEEL REINFORCEMENT	21,895.00	LB		$	
1960	08151		STEEL REINFORCEMENT-EPOXY COATED	214,023.00	LB		$	
1970	08473		EXPANSION DAM-NEOPRENE	28.00	LF		$	
1980	08500		APPROACH SLAB	184.00	SQYD		$	
1990	21532ED		RAIL SYSTEM TYPE III	1,291.00	LF		$	
2000	23963EC		PPC I-BEAM TYPE HN36-49	2,544.60	LF		$	

Section: 0005 - BRIDGE - RAMP C - OVER FLAT CREEK - DWG. 27185

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2010	02231		STRUCTURE GRANULAR BACKFILL	339.00	CUYD		$	
2020	02998		MASONRY COATING	2,928.00	SQYD		$	
2030	03299		ARMORED EDGE FOR CONCRETE	172.80	LF		$	
2040	08001		STRUCTURE EXCAVATION-COMMON	228.00	CUYD		$	
2050	08019		CYCLOPEAN STONE RIP RAP	898.00	TON		$	
2060	08033		TEST PILES	264.00	LF		$	
2070	08046		PILES-STEEL HP12X53	1,344.00	LF		$	
2080	08051		PILES-STEEL HP14X89	1,144.00	LF		$	
2090	08094		PILE POINTS-12 IN	30.00	EACH		$	
2100	08095		PILE POINTS-14 IN	27.00	EACH		$	
2110	08100		CONCRETE-CLASS A	316.00	CUYD		$	
2120	08104		CONCRETE-CLASS AA	609.90	CUYD		$	
2130	08150		STEEL REINFORCEMENT	23,304.00	LB		$	
2140	08151		STEEL REINFORCEMENT-EPOXY COATED	177,587.00	LB		$	
2150	08500		APPROACH SLAB	307.00	SQYD		$	
2160	21532ED		RAIL SYSTEM TYPE III	598.80	LF		$	
2170	23963EC		PPC I-BEAM TYPE HN36-49	1,713.30	LF		$	

Section: 0006 - BRIDGE - CR 1152 OVER FLAT CREEK - DWG. 27186

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2180	02231		STRUCTURE GRANULAR BACKFILL	263.00	CUYD		$	
2190	02998		MASONRY COATING	1,369.00	SQYD		$	
2200	03299		ARMORED EDGE FOR CONCRETE	100.80	LF		$	
2210	08001		STRUCTURE EXCAVATION-COMMON	121.00	CUYD		$	
2220	08019		CYCLOPEAN STONE RIP RAP	748.00	TON		$	
2230	08033		TEST PILES	217.00	LF		$	
2240	08046		PILES-STEEL HP12X53	489.00	LF		$	
2250	08051		PILES-STEEL HP14X89	958.00	LF		$	
2260	08094		PILE POINTS-12 IN	16.00	EACH		$	
2270	08095		PILE POINTS-14 IN	26.00	EACH		$	
2280	08100		CONCRETE-CLASS A	205.10	CUYD		$	
2290	08104		CONCRETE-CLASS AA	425.50	CUYD		$	
2300	08150		STEEL REINFORCEMENT	13,203.00	LB		$	

PROPOSAL BID ITEMS

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2310	08151		STEEL REINFORCEMENT-EPOXY COATED	132,137.00	LB		$	
2320	08500		APPROACH SLAB	296.00	SQYD		$	
2330	21532ED		RAIL SYSTEM TYPE III	586.00	LF		$	
2340	23963EC		PPC I-BEAM TYPE HN36-49	1,430.30	LF		$	

Section: 0007 - BRIDGE - RAMP C DOUBLE 10' X 5' RCBC EXTENSION - DWG. 27187

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2350	02403		REMOVE CONCRETE MASONRY	17.50	CUYD		$	
2360	08003		FOUNDATION PREPARATION	1.00	LS		$	
2370	08100		CONCRETE-CLASS A	48.20	CUYD		$	
2380	08150		STEEL REINFORCEMENT	5,286.00	LB		$	

Section: 0008 - BRIDGE - SOIL NAIL WALL - DWG. 27188

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2390	02572		QUALITY CONTROL	1.00	LS		$	
2400	02998		MASONRY COATING	434.00	SQYD		$	
2410	08003		FOUNDATION PREPARATION	1.00	LS		$	
2420	08019		CYCLOPEAN STONE RIP RAP	1,065.00	TON		$	
2430	20603ED		SOIL NAIL WALL	3,701.00	SQFT		$	

Section: 0009 - SEWER

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2440	01083		STEEL ENCASEMENT PIPE-BORE&JACK-12 IN	200.00	LF		$	
2450	01084		STEEL ENCASEMENT PIPE-OPEN CUT-12 IN	500.00	LF		$	
2460	02690		SAFELOADING (SAFELOAD ABANDONED CASING PIPES)	1.00	CUYD		$	
2470	03544		BEND 22.50 DEG 4 IN	7.00	EACH		$	
2480	03553		BEND 45 DEG 4 IN	4.00	EACH		$	
2490	03559		BEND 90 DEG 4 IN	1.00	EACH		$	
2500	20826ED		SOLID SLEEVE 4IN (DIMJ)	2.00	EACH		$	
2510	22082NN		AIR RELEASE VALVE ASSEMBLY (FORCE MAIN)	1.00	EACH		$	
2520	22131NN		CONNECT TO FORCE MAIN-4 IN	2.00	EACH		$	
2530	22139NN		CONNECT TO SEWER MAIN (TRANSFER 1" FM SERVICE TO NEW 4" SERVICE)	1.00	EACH		$	
2540	23599EC		PVC FORCE MAIN-4 IN (SDR 21 PIPE)	2,208.00	LF		$	
2550	24203EC		CUT AND PLUG-4 IN	1.00	EACH		$	

Section: 0010 - SIGNING

PROPOSAL BID ITEMS

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0120	02775		ARROW PANEL	1.00	EACH		$	
0130	04904		BARRIER MOUNTING BRACKET	5.00	EACH		$	
0140	06400		GMSS GALV STEEL TYPE A	3,835.00	LB		$	
0150	06405		SBM ALUMINUM PANEL SIGNS	1,664.00	SQFT		$	
0160	06406		SBM ALUM SHEET SIGNS .080 IN	210.00	SQFT		$	
0170	06407		SBM ALUM SHEET SIGNS .125 IN	650.00	SQFT		$	
0180	06410		STEEL POST TYPE 1	1,332.00	LF		$	
0190	06441		GMSS GALV STEEL TYPE C	7,281.00	LB		$	
0200	06451		REMOVE SIGN SUPPORT BEAM	20.00	EACH		$	
0210	06490		CLASS A CONCRETE FOR SIGNS	38.00	CUYD		$	
0220	06491		STEEL REINFORCEMENT FOR SIGNS	1,370.00	LB		$	
0230	20418ED		REMOVE & RELOCATE SIGNS	4.00	EACH		$	
0240	20419ND		ROADWAY CROSS SECTION	12.00	EACH		$	
0250	20912ND		BARRIER WALL POST	5.00	EACH		$	
0260	21373ND		REMOVE SIGN	6.00	EACH		$	
0270	21596ND		GMSS TYPE D	13.00	EACH		$	
0280	24631EC		BARCODE SIGN INVENTORY	120.00	EACH		$	

Section: 0011 - LIGHTING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0290	04714		POLE 120 FT MTG HT HIGH MAST	8.00	EACH		$	
0300	04761		LIGHTING CONTROL EQUIPMENT	1.00	EACH		$	
0310	04773		HPS LUMINAIRE HIGH MAST	48.00	EACH		$	
0320	04797		CONDUIT-3 IN	1,660.00	LF		$	
0330	04800		MARKER	12.00	EACH		$	
0340	04820		TRENCHING AND BACKFILLING	10,275.00	LF		$	
0350	04860		CABLE-NO. 8/3C DUCTED	1,650.00	LF		$	
0360	04861		CABLE-NO. 6/3C DUCTED	2,300.00	LF		$	
0370	04862		CABLE-NO. 4/3C DUCTED	6,325.00	LF		$	
0380	04940		REMOVE LIGHTING	1.00	LS		$	
0390	20392NS835		ELECTRICAL JUNCTION BOX TYPE C	11.00	EACH		$	
0400	20410ED		MAINTAIN LIGHTING	1.00	LS		$	
0410	21543EN		BORE AND JACK CONDUIT	1,660.00	LF		$	
0420	23161EN		POLE BASE-HIGH MAST	78.00	CUYD		$	

Section: 0012 - WATERLINE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0430	01083		STEEL ENCASEMENT PIPE-BORE&JACK-12 IN	200.00	LF		$	
0440	01084		STEEL ENCASEMENT PIPE-OPEN CUT-12 IN	655.00	LF		$	
0450	01091		DUCTILE IRON PIPE-4 IN (WATER - CL 350 PIPE)	599.00	LF		$	
0460	02690		SAFELOADING (SAFELOAD ABANDONED CASING PIPES)	1.00	CUYD		$	
0470	03382		PVC PIPE-3 IN (WATER - DR 18 PIPE)	10.00	LF		$	

PROPOSAL BID ITEMS

151220

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0480	03383		PVC PIPE-4 IN (WATER - DR 18 PIPE)	557.00	LF		$	
0490	03385		PVC PIPE-6 IN (WATER DR 18 PIPE)	2,835.00	LF		$	
0500	03523		GATE VALVE-3 IN (DIMJ)	1.00	EACH		$	
0510	03524		GATE VALVE-4 IN (DIMJ)	1.00	EACH		$	
0520	03526		GATE VALVE-6 IN (DIMJ)	6.00	EACH		$	
0530	03544		BEND 22.50 DEG 4 IN (DIMJ)	2.00	EACH		$	
0540	03545		BEND 22.50 DEG 6 IN	4.00	EACH		$	
0550	03553		BEND 45 DEG 4 IN (DIMJ)	2.00	EACH		$	
0560	03554		BEND 45 DEG 6 IN	5.00	EACH		$	
0570	03560		BEND 90 DEG 6 IN	1.00	EACH		$	
0580	20056NN		REDUCER (DIMJ 6" X 3")	2.00	EACH		$	
0590	20081NN		CONNECT TO WATER MAIN (TWO 6" CONNECTS, TWO 3" CONNECTS)	4.00	EACH		$	
0600	20083NN		CONNECT TO SERVICE (RECONNECT 4" WATER SERVICE)	1.00	EACH		$	
0610	20120EC		SOLID SLEEVE-6 IN	2.00	EACH		$	
0620	20644ND		TEE AND BLOCK 6 IN X 6 IN X 6 IN (DIMJ)	2.00	EACH		$	
0630	20826ED		SOLID SLEEVE 4IN (DIMJ)	1.00	EACH		$	
0640	20864ND		FIRE HYDRANT ASSEMBLY	1.00	EACH		$	
0650	21114ND		CUT AND PLUG 6 IN	2.00	EACH		$	
0660	22082NN		AIR RELEASE VALVE ASSEMBLY (WATER MAIN)	2.00	EACH		$	
0670	22605NN		CAP AND BLOCK-6 IN	1.00	EACH		$	
0680	23014EN		CONC/STEEL ENCASED CREEK CROSSING (CREEK CROSSING INCLUDES 12" STEEL ENCASEMENT PIPE & CONCRETE CAP)	40.00	LF		$	
0690	23831EC		BEND 45 DEG-3 IN (DIMJ)	4.00	EACH		$	
0700	24203EC		CUT AND PLUG-4 IN	2.00	EACH		$	
0710	24206EC		TEE AND BLOCK-6 X 6 X 4 IN (DIMJ)	1.00	EACH		$	
0720	24237ND		CUT AND PLUG 3 IN	2.00	EACH		$	
0730	24483ED		METER AND BOX (FOR 3" & 4" METERS)	2.00	EACH		$	
0740	24600EC		SOLID SLEEVE (3" DIAMETER DIMJ)	2.00	EACH		$	

Section: 0013 - TRAINEE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0750	02742		TRAINEE PAYMENT REIMBURSEMENT 1 GROUP 2, 3 OR 4 OPERATOR	1,400.00	HOUR		$	

PROPOSAL BID ITEMS

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Section: 0014 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0760	02568		MOBILIZATION	1.00	LS		$	
0770	02569		DEMOBILIZATION	1.00	LS		$	